

Supplementary Table S1. Pre-specified sensitivity analyses for the head trauma–motor subtype association.

Sensitivity scenario	HT (n)	No HT (n)	χ^2 p-value
Primary analysis (full cohort)	35	202	0.010
(i) Disease duration ≥ 6 months	21	151	0.013
(ii) Major HT only (LOC-positive)	17	202	0.101
(iii) Jankovic-style subtype classification	35	202	0.040
(iv) HT timing ≥ 1 year before PD onset	32	202	0.017
HT timing ≥ 5 years before PD onset	26	202	0.053
HT timing ≥ 10 years before PD onset	21	202	0.134

All p-values are from Fisher's exact test of the HT \times motor-subtype contingency table (3 categories: tremor-dominant, mixed, akinetic-rigid; or, for sensitivity (iii), tremor-dominant, indeterminate, postural instability/gait difficulty). Bold indicates the primary analysis. HT, head trauma; LOC, loss of consciousness; PD, Parkinson's disease.