

Supplementary Material

Neurofilament Light Protein Predicts Disease Progression in Idiopathic REM Sleep Behavior Disorder

Supplementary Table 1. Correlations between serum NfL levels (log₁₀-transformed) and cognitive/motor function in patients with iRBD and PDRBD in the PPMI dataset

Variables	Correlation Coefficient	95% CI	p
iRBD			
Cognitive function (defined by MoCA scores)	-0.219	-0.545 ~ 0.131	0.229
Motor function (defined by UPDRS part III scores)	0.260	-0.036 ~ 0.517	0.151
PDRBD			
Cognitive function (defined by MoCA scores)	-0.317	-0.480 ~ -0.131	<0.001
Motor function (defined by UPDRS part III scores)	0.323	0.156 ~ 0.482	0.001

Spearman correlation analysis.

PPMI, Parkinson's Progression Markers Initiative; iRBD, idiopathic rapid eye movement sleep behavior disorder; PDRBD, Parkinson's disease with a premorbid history of rapid eye movement sleep behavior disorder; MoCA, Montreal Cognitive Assessment; UPDRS, United Parkinson's Disease Rating Scale; NfL, neurofilament light chain; CI: Confidence interval.

Supplementary Table 2. Multivariate linear regression models for cognitive/motor symptom severity in patients with PDRBD in the PPMI dataset

Independent variables	Coefficient	Standard error	r	t	p
Cognitive function (defined by MoCA scores)					
Constant	31.197				
Age	-0.003	0.030	-0.011	-0.090	0.928
Male sex	-1.417	0.445	-0.278	-3.188	0.002
Disease duration	0.149	0.131	0.096	1.136	0.259
Serum NfL level (log₁₀-transformed)	-3.260	1.427	-0.278	-2.285	0.024
Motor function (defined by UPDRS part III scores)					
Constant	3.212				
Age	-0.016	0.112	-0.018	-0.140	0.889
Male sex	4.388	1.677	0.235	2.617	0.010
Disease duration	0.991	0.495	0.175	2.003	0.048
Serum NfL level (log₁₀-transformed)	13.502	5.687	0.290	2.374	0.019

PPMI, Parkinson's Progression Markers Initiative; PDRBD, Parkinson's disease and premorbid history of rapid eye movement sleep behavior disorder; MoCA, Montreal Cognitive Assessment; UPDRS, United Parkinson's Disease Rating Scale; NfL, neurofilament light chain.