

Supplementary Table 1. Cognitive tests results in three cohorts shown as z-scores in each cognitive test

Cognitive tests	Drug naïve PD	iRBD	Healthy control	p-value*
Attention				
Digit span, backward	0.10 ± 0.97	-0.01 ± 0.98	-0.39 ± 0.73	0.458
TMT-A	-1.23 ± 4.11	-0.60 ± 1.02	-0.06 ± 0.39	0.456
Language				
K-BNT	0.09 ± 0.90	-0.10 ± 1.13	0.52 ± 0.54	0.185
Frontal-executive function				
TMT-B	-1.09 ± 2.12	-1.13 ± 1.97	0.50 ± 0.23	0.041
Stroop test, color reading	-0.84 ± 0.81	-0.78 ± 0.82	-0.14 ± 0.87	0.052
COWAT semantic fluency	-0.06 ± 0.81	-0.35 ± 0.96	-0.18 ± 0.90	0.547
COWAT phonemic fluency	-0.85 ± 0.70	-0.75 ± 0.85	-0.39 ± 0.80	0.270
Memory				
SVLT delayed recall	-0.76 ± 1.31	-0.70 ± 1.11	0.16 ± 1.09	0.061
SVLT recognition	-0.28 ± 1.13	-0.33 ± 1.06	0.61 ± 0.99	0.019
Visuospatial function				
RCFT copy	-1.19 ± 1.10	-1.99 ± 1.57	0.35 ± 5.98	0.086

Data are shown as mean ± standard deviation. *comparison among the three groups by the ANOVA test for z-scores and by the chi-square or Fisher's exact test for frequencies. PD: Parkinson's disease, iRBD: idiopathic rapid eye movement sleep behavior disorder, TMT: Trail Making Test, K-BNT: Korean version Boston Naming Test, COWAT: Controlled Oral Word Association Test, SVLT: Seoul Verbal Learning Test, RCFT: Rey Complex Figure Test.