

Supplemental Material S1. Description of cognitive and speech performance for each participant.

Participant	Mattis Dementia Rating Scale total	Inhibition index	Shifting z-score	Phonemic Verbal fluency z-score	Dysarthria severity	Intelligibility (error frequency)	Maximum Phonation Time (secs.)	Speech rate DDK CV ² (syll./sec.)	Speech rate DDK CCV ³ (syll./sec.)
P1	144	1.72	0.49	-0.24	6	2²	16.43	8.22	10.06
P2	126¹	1.38	1.10	-0.52	4	N/A	36.11	11.08	11.96
P3	136	1.56	-0.25	-1.53¹	3	6²	29.71	8.67	10.60
P4	139	1.40	-1.35¹	0.07	2	0	6.07²	9.21	11.49
P5	140	1.40	0.04	-0.10	3	0	25.91	11.01	14.79
P6	134	1.48	0.48	-1.29¹	4	1¹	19.16	9.73	11.53
P7	142	1.23	0.33	0.30	4	0	18.98	8.15	11.08
P8	142	1.48	0.18	1.94	3	0	25.22	7.92	11.06
P9	141	1.12	0.70	1.81	8	1¹	26.18	7.85	10.49
P10	140	1.01	1.45	0.57	3	0	24.49	11.64	13.53
P11	140	1.23	0.25	1.90	1	0	25.51	8.95	10.76
P12	139	1.62	1.45	-0.24	9	0	28.73	11.99	14.37
P13	142	1.23	0.86	1.70	5	0	26.52	6.92	9.64
P14	140	1.47	-1.30¹	-0.11	6	1¹	14.91	11.20	11.76
P15	140	1.44	1.03	-1.34¹	6	0	13.49	12.06	15.07
P16	129	0.88	-0.29	-1.88²	10	N/A	14.34	10.03	11.53
P17	138	1.30	-0.33	0.63	6	0	11.51	7.97	10.93
P18	135	1.85	-0.67	-1.48¹	13	1¹	12.95	8.38	10.30
P19	144	1.48	1.10	1.07	2	2²	22.15	12.00	17.68² (faster)
P20	139	1.80	-0.94	-1.34¹	11	0	22.20	10.81	12.00
P21	134	1.54	0.57	-1.34¹	5	0	9.01¹	8.81	11.69
P22	138	1.62	0.58	1.40	9	2²	17.70	11.79	13.76
P23	142	1.41	-0.85	-0.79	3	0	30.36	7.94	9.50
P24	142	1.06	0.76	-0.93	3	0	23.75	12.13	16.46
P25	144	1.27	1.57	1.33	4	0	13.84	8.68	11.86
P26	133	1.55	-1.25¹	-0.52	7	0	7.77¹	12.96² (faster)	18.22² (faster)
P27	142	1.34	1.40	2.45	3	0	7.76¹	10.60	12.01
P28	144	1.46	0.89	-0.51	1	0	15.97	9.98	11.94
P29	142	1.53	1.40	-0.16	4	1¹	9.82	9.30	10.06
P30	143	1.42	-0.25	0.27	3	0	18.05	10.89	12.59

¹Score at the limit of the norms (between -1.65 and < -1.28 standard deviation/Percentile 5 to < 10). ²Impaired score (below -1.65 standard deviation/Percentile 5). ³Diadochokinetic task: CV = consonant-vowel items; CCV = consonant-consonant-vowel items.

Note. Since the Inhibition index is based on an experimental task, no normative data are available for this task. For dysarthria severity (BECD scale), although no normative cut-off scores were published, the validation sample showed that 1% of patients showed a score of 0, 3% a score of 0 or 1, and 3.5% equal or below 2. In the control group, 42.5% showed a score of 0, 70% of 0 or 1, and 85% equal to or below 2. Intelligibility, maximum phonation time and speech rate were evaluated with the MonPaGe battery (Fougeron et al., 2016; Laganaro et al., 2021). Intelligibility test consists in producing 15 words appearing on a grid in a contextual sentence outside of the listener's visual field. The score is the error frequency (number of misperceived words). Maximum phonation time is produced with /a/ vowel at a comfortable level as long as possible for two trials (the best performance of the two is kept). Speech rate is evaluated based on a 7 items diadochokinetic task (speeded production of the same and alternating syllables during 4 seconds), including pauses. Score is the mean of the items for consonant-vowel items and consonant-consonant-vowel items. Two patients did not complete the intelligibility test.