

Table S1. Detailed description of speech and cognitive variables.

Variable	NO. (%); Mean [±SD]; Median {Range}				
	Preoperative Assessment		Postoperative Assessment		
	Off-medication	On-medication	On-stimulation/off-medication	Off-stimulation/off-medication	On-stimulation/on-medication
Speech Variables					
Speech intelligibility (%)	89.60 [± 14.38]; 96.00 {64.00-98.00}	88.60 [± 14.92]; 94.00 {62.00-97.00}	85.00 [± 19.18]; 94.00 {56.00-100.00}	76.30 [± 24.45]; 87.50 {48.00-100.00}	76.40 [± 28.43]; 86.00 {28.00-100.00}
Mean intensity of spontaneous speech (dB)	66.40 [± 2.40]; 67.00 {63.00-69.00}	64.00 [± 11.31]; 70.00 {49.00-75.00}	62.20 [± 7.79]; 59.00 {57.00-76.00}	60.00 [± 5.95]; 57.00 {56.00-70.00}	61.00 [± 7.74]; 58.00 {55.00-74.00}
F0 SD of spontaneous speech (Hz)	37.56 [± 29.63]; 25.65 {15.26-89.00}	42.28 [± 22.93]; 32.19 {22.10-76.00}	45.71 [± 24.32]; 34.93 {24.42-80.24}	30.19 [± 3.22]; 29.49 {27.03-35.39}	34.10 [± 10.87]; 29.26 {22.17-42.27}
Maximum phonation time (MPT) (seconds)	16.60 [± 7.26]; 14.00 {8.00-26.00}	15.40 [± 7.50]; 15.00 {7.00-26.00}	15.80 [± 9.62]; 13.00 {7.00-32.00}	11.90 [± 9.23]; 7.00 {5.00-27.00}	14.40 [± 6.34]; 12.00 {7.00-22.00}
Mean intensity of sustained phonation (dB)	73.20 [± 4.96]; 72.00 {67.00-80.00}	69.40 [± 7.50]; 71.00 {59.00-78.00}	65.50 [± 13.55]; 64.00 {52.00-88.00}	66.40 [± 10.83]; 63.00 {58.00-85.00}	65.80 [± 15.69]; 62.00 {46.00-88.00}
Count rate (sill/sec)	4.47 [± .78]; 4.30 {3.52-5.67}	5.09 [± .84]; 5.67 {3.80-5.67}	4.09 [± 1.34]; 3.60 {2.68-6.14}	3.91 [± .88]; 3.92 {2.68-5.10}	4.64 [± 1.96]; 4.64 {2.22-7.28}
Cognitive Variables					
Phonemic fluency	32.00 [± 2.86]; 32.61 {28.86-35.35}			28.64 [± 8.14]; 30.90 {15.32-35.79}	
Spatial perception localization of numbers	9.20 [± .83]; 9.00 {8.00-10.00}			7.80 [± 1.30]; 7.00 {7.00-10.00}	
1947 colored Raven's progressive matrices	26.97 [± 5.10]; 29.48 {21.00-31.98}			25.37 [± 4.70]; 22.76 {21.22-32.20}	
Stroop test "time"	24.35 [± 13.19]; 21.00 {12.50-47.00}			36.95 [± 19.04]; 36.00 {11.50-63.00}	
Stroop test "errors"	.80 [± .73]; .75 {0.00-2.00}			4.75 [± 5.84]; 1.75 {0.00-13.50}	
Trail making test part B	105.80 [± 94.12]; 65.00 {57.00-274.00}			190.20 [± 191.50]; 120.00 {74.00-531.00}	