

Appendix 1: Variables Assessment, Quality of Recovery, and Quality of Life

Variables	Control Group	Closed-loop Group	Point Estimate (95% CI)	P Value
Assessment of cognitive function				
1 week postsurgery (days)	3 [2 to 5]	4 [3 to 5]	0 (0 to 1)	0.181
3 months postsurgery (days)	92 [91 to 106]	92 [90 to 100]	0 (-7 to 5)	0.739
Preoperative				
Quality of recovery (QoR-15)	138 [118 to 142]	137 [123 to 145]	2 (-3 to 7)	0.498
Quality of life (EQ-5D-5L)	25 [21 to 25]	24 [21 to 25]	0 (0 to 0)	0.847
1 week postsurgery				
Quality of recovery (QoR-15)	131 [117 to 139]	132 [121 to 141]	1 (-5 to 8)	0.674
3 months postsurgery				
Quality of life (EQ-5D-5L)	25 [22 to 25]	24 [21 to 25]	0 (-1 to 0)	0.539
Δ QoR-15 (preoperative–1 week postsurgery)	-4 [-9 to +3]	-3 [-13 to +2]	-1 (-5 to 6)	0.855
Δ Quality of life (EQ-5D-5L) (preoperative–3 months postsurgery)	0 [-1 to +2]	0 [-1 to +2]	0 (-1 to 1)	0.910

Data are presented as median [25th to 75th percentiles]. Point estimates for group differences were estimated for Mann–Whitney U test as the median difference in the set of values representing all differences in pairings between the two groups.

Δ : Quality of recovery was assessed preoperatively and 1 week postsurgery. Quality of life was evaluated preoperatively and 3 months postsurgery.

Appendix 2: Specific Neurocognitive Tests Performed at 1 Week Postsurgery

Variables	Control Group (N = 44)	Closed-loop Group (N = 45)	Point Estimate (95% CI)	P Value
Episodic memory (Free and Cued Selective Reminding Test)				
Total of free recalls preoperative	24 [21 to 30]	22 [19 to 26]	3 (0 to 5)	0.070
Total of free recalls 1 week postsurgery	30 [23 to 34]	27 [20 to 33]	2 (-1 to 6)	0.245
Δ Total of free recalls (preoperative-1 week postsurgery)	-2 [-7 to 1]	-3.5 [-6.75 to 0 .75]	1 (-2 to 3)	0.615
Delayed free recall preoperative	9 [7 to 11]	9 [7.5 to 10.5]	0 (-1 to 1)	0.658
Delayed free recall one week postsurgery	11 [8 to 13]	10 [8 to 12]	1 (-1 to 2)	0.339
Δ Delayed free recall (preoperative-1 week postsurgery)	-1 [-3 to 0]	-1 [-2 to 0]	0 (-1 to 1)	0.631
Working memory (Forward and Backward digit spans)				
Index of working memory preoperative	3 [1 to 6]	4 [2 to 6]	0 (-2 to 1)	0.503
Index of working memory 1 week postsurgery	3 [0.75 to 6]	4 [2 to 6]	-1 (-2 to 0)	0.133
Δ Index of working memory (preoperative-1 week postsurgery)	0 [-2 to 2]	0 [-2 to 1]	0 (-1 to 2)	0.726
Executive function (Stroop test)				
Index of inhibition (time [s]) preoperative	60 [36 to 80]	73 [51 to 106]	-16 (-32 to 0)	0.055
Index of inhibition (time [s]) 1 week postsurgery	53 [36 to 85]	60 [45 to 88]	-6 (-20 to 8)	0.394
Δ Index of inhibition (time [s]; (preoperative-1 week postsurgery)	-0.5 [-7 to 10.3]	0 [-3 to 20]	-3 (-11 to 3)	0.266
Index of inhibition (errors) preoperative	2 [0 to 4]	3 [0 to 7]	-1 (-2 to 1)	0.218
Index of inhibition (errors) 1 week postsurgery	2 [1 to 4]	2 [1 to 4]	0 (-1 to 1)	0.954
Δ Index of inhibition (errors; preoperative-1 week postsurgery)	-1 [-2 to 1.25]	0 [-2 to 2]	0 (-2 to 1)	0.636

Data are presented as median [25th to 75th percentiles]. Point estimates for group differences were estimated for Mann-Whitney U test as the median difference in the set of values representing all differences in pairings between the two groups.

