

Supplementary Material

	SVF	PVF	Forward span	Backward span	MDRS	Stroop color	Stroop word	Stroop color/word	Stroop I score	TMT A	TMT B	TMT B-A
NSE	0.21	0.24	0.38	0.22	0.39*	0.29	0.11	0.22	0.19	-0.06	-0.34	0.3
Number of previous episodes	0.33	0.12	0.27	0.39*	0.26	0.08	0.28	0.36	0.41*	-0.11	-0.32	-0.31
Disease duration	0.2	0.44*	-0.04	0.23	0.14	0.14	0.31	0.34	0.34	-0.3	-0.3	-0.22
MADRS	-0.27	-0.24	-0.02	-0.04	-0.38	-0.24	-0.31	-0.07	-0.13	0.35	0.34	0.25
• MADRS-S	-0.14	-0.1	-0.06	0.13	-0.07	-0.1	-0.1	0.2	0.14	0.03	0.12	0.13
• MADRS-NV	-0.2	-0.22	-0.03	-0.03	-0.27	-0.11	-0.12	0	0	0.32	0.2	0.03
• MADRS-D	-0.46*	-0.12	0	-0.14	-0.38	-0.15	-0.41*	-0.17	-0.17	0.37	0.23	0.28
• MADRS-NT	-0.05	0.07	-0.02	-0.17	-0.38	-0.19	-0.2	-0.15	-0.3	0.22	0.34	0.32
AES	-0.48*	-0.49*	-0.48*	-0.44*	-0.51**	-0.23	-0.43*	-0.33	-0.38	0.29	0.42	0.19
STAI-B	0.05	0.06	0.04	0.26	-0.07	0.1	0.13	0.29	0.14	-0.14	-0.01	0.06

Supplementary table 1 – MDD sample characteristics and their associations with cognitive functions. Spearman rho's are displayed.

Significant associations are in bold and marked with * p-values < 0.05 and ** p-values < 0.005**, uncorrected.

	MCST-Time	MCST-Categories	MCST-Errors	MCST-Perseverations	DSST
NSE	-0.68**	0.13	-0.5**	-0.52**	0.3
Number of previous episodes	0	-0.26	-0.12	0.17	0.28
Disease duration	0.36	-0.35	0.29	0.37	0.26
MADRS	-0.03	-0.13	-0.03	0.3	-0.22
• MADRS-S	0.02	0.08	0.01	0.04	0.12
• MADRS-NV	0.11	-0.31	0.1	0.49*	-0.17
• MADRS-D	0.18	-0.22	0.12	0.39	-0.27
• MADRS-NT	-0.22	0.15	-0.31	-0.13	-0.19
AES	0.3	-0.05	0.08	0.27	-0.41*
STAI-B	-0.13	0.02	-0.21	0.06	0.04

Supplementary table 1 (follow) – Patient sample characteristics and their associations with cognitive functions. Spearman rho's are displayed. Significant associations are in bold and marked with * p-values < 0.05 and ** p-values < 0.005**, uncorrected.

Supplementary Table 2: Comparison of the neuropsychological performances of the MDD and HC groups. Values given are means with S.D in parentheses.[%] are the proportions of individuals per group that show performances considered as abnormal based on healthy French or European French speaking population based on the following references: Backward span: Gregoire and Van der Linden ¹, the Stroop: Marie Vanier², Trail Making Test – the Groupe de Reflexion sur les Fonctions Executives (GREFEX) : batterie normative³, the Modified Card Sorting Test: Caffara et al.⁴, the digit symbol substitution test (DSST), a sub-test from the Wescher Adult Intelligence Scale III⁵ and the Verbal Fluency test: Cardebat et al⁶.

1 Grégoire, Jacques, et Martial Van der Linden. 1997. « Effect of age on forward and backward digit spans ». *Aging Neuropsychology and Cognition - AGING NEUROPSYCHOL COGN* 4 (juin): 140- 49. <https://doi.org/10.1080/13825589708256642>.

2 Vanier, Marie. s. d. « TRAUMATISME CRANIO-ENCÉPHALIQUE PSYCHOLOGIQUE. J.R. Stroop (1935) adaptation de C.J. Golden (1978). Préparé sous la responsabilité de: - PDF Téléchargement Gratuit ». Consulté le 29 juillet 2021

3 Roussel, Martine, et Olivier Godefroy. 2008. « La batterie GREFEX: Données normatives ». *Fonctions exécutives et pathologies neurologiques et psychiatriques*, janvier, 231- 52

4 Caffarra, Paolo, Giuliana Vezzadini, Francesca Dieci, Fabrizio Zonato, et Annalena Venneri. 2004. « Modified Card Sorting Test: Normative Data ». *Journal of Clinical and Experimental Neuropsychology* 26 (2): 246- 50. <https://doi.org/10.1076/jcen.26.2.246.28087>

5 Wechsler, David et Psychological Corporation. 1997. *WAIS-III: Administration and Scoring Manual : Wechsler Adult Intelligence Scale*. San Antonio, Tex: Psychological Corporation.

6 Cardebat, D., B. Doyon, M. Puel, P. Goulet, et Y. Joanette. 1990. « [Formal and semantic lexical evocation in normal subjects. Performance and dynamics of production as a function of sex, age and educational level] ». *Acta Neurologica Belgica* 90 (4): 207- 17

	MDD group (n = 26)	HC group (n = 25)	Comparison
Forward Span	5.4 (1.1)	6 (1)	W = 241, p = 0.15
Backward Span	4 (1.22) [19%]	4.6 (0.97) [4%]	W = 206,5, p = 0.034
Stroop Color	62.9 (18.5)	75.8 (9.3)	W = 121, p < 0.001
Stroop Word	86.2 (19)	105.5 (10)	W = 166, p < 0.005
Stroop color/word	33.6 (13.2)	43.9 (8.7)	W = 170.5, p = 0.006
Stroop Interference score	-3.15(8.5) [7.7%]	0.7 (7.6) [0%]	W = 247.5, p = 0.21
TMT A	48.5 (29.6)	36.7 (13.2)	W = 383, p = 0.17
TMT B	112 (60.8)	69.9 (25.5)	W = 462.5, p = 0.004
TMT B-A	60.6 (49.8) [11.5%]	38.3 (22.5) [4%]	W = 421.5, p = 0.034
MCST-Time	189.4 (60.8)	129.9 (31.9)	W = 508.5, p < 0.001
MCST-Categories	5.8 (0.8)	5.9 (0.3)	W = 322, p = 0.76
MCST-Errors	3.2 (4.8)	0.8 (1.5)	W = 448.5, p = 0.06
MCST-Perseverations	0.8 (2) [0%]	0.1 (0.4) [0%]	W = 383.5, p = 0.03
DSTT scores	57.5 (13.2) [15.4%]	78.5 (12.7) [0%]	W = 78.5 p < 0.001
Semantic Fluency	25 (9) [27%]	30.7 (5.4) [8%]	W = 519.5 p = 0.003
Phonemic Fluency	18.5 (6) [15.4%]	24.2 (6.4) [4%]	W = 466, p = 0.001

Supplementary Table 3: Multiple regression analysis between the CT of the pars triangularis and the VFT in the HC group

Semantic VFT (quantitative score)	t = - 0.398
Phonemic VFT (quantitative score)	t = - 0.059

Supplementary Figure 1 – Significant reduced FA values in MDD patients compared to HC (age considered as covariate). Cluster size= 55 533 voxels including: the forceps minor and major, bilateral inferior fronto-occipital fasciculus (IFOF), bilateral uncinate fasciculi (UF), inferior longitudinal fasciculi and superior longitudinal fasciculi (SLF), n=5000 permutations. Color bar indicates 1-p value. Clusters are overlaid on a canonical template provided by FSLeyes (<https://git.fmrib.ox.ac.uk/fsl/fsleyes/fsleyes/>) (1mm resolution).

