
Supplementary information

Long-lasting, dissociable improvements in working memory and long-term memory in older adults with repetitive neuromodulation

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authors and unedited

Supplementary Table 1: Omnibus and follow-up mixed ANOVAs examining the effect of modulation group, serial position, and measurement day on memory performance, with and without accounting for covariates (age, sex, education, MoCA, GDS)

a. Without covariates

Interaction	F	<i>p</i>	η_p^2
Day x Serial Position x Group (Sham, DLPFC Gamma, IPL Theta)	3.88	1.5E-8	0.12
Day x Serial Position x Group (IPL Theta, DLPFC Gamma)	4.75	4.0E-6	0.11
Day x Serial Position x Group (IPL Theta, Sham)	3.11	0.001	0.08
Day x Serial Position x Group (DLPFC Gamma, Sham)	3.60	1.3E-4	0.09

b. With covariates

Interaction	F	<i>p</i>	η_p^2
Day x Serial Position x Group (Sham, DLPFC Gamma, IPL Theta)	4.02	1.9E-9	0.13
Day x Serial Position x Group (IPL Theta, DLPFC Gamma)	5.58	1.1E-7	0.15
Day x Serial Position x Group (IPL Theta, Sham)	3.03	0.001	0.08
Day x Serial Position x Group (DLPFC Gamma, Sham)	3.26	4.5E-4	0.09

All p-values are Greenhouse-Geisser corrected.

Supplementary Table 2. Follow-up mixed ANOVAs examining the interaction effect between serial position and group for each measurement day in Experiment 1, with and without covariates (age, sex, education, MoCA, GDS)

a. Between DLPFC gamma and sham

		Without covariates			With covariates		
Interaction	Day	F	<i>p</i>	η_p^2	F	<i>p</i>	η_p^2
Serial Position x Group	Baseline	1.41	0.25	0.04	1.55	0.21	0.05
	Day 1	2.54	0.07	0.06	2.49	0.08	0.07
	Day 2	7.23	8.9E-5	0.16	6.66	1.8E-4	0.17
	Day 3	15.33	3.1E-8	0.29	13.47	2.4E-7	0.29
	Day 4	10.70	5.0E-6	0.22	9.12	1.5E-5	0.22
	1 Month	3.44	0.02	0.08	3.18	0.03	0.09

b. Between IPL theta and sham

		Without covariates			With covariates		
Interaction	Day	F	<i>p</i>	η_p^2	F	<i>p</i>	η_p^2
Serial Position x Group	Baseline	0.06	0.97	1E-3	0.11	0.95	3E-3
	Day 1	0.36	0.76	9E-3	0.42	0.74	0.01
	Day 2	1.21	0.31	0.03	1.16	0.33	0.03
	Day 3	5.71	4.5E-4	0.13	4.63	2E-3	0.12
	Day 4	18.93	1.7E-10	0.33	17.39	3.2E-9	0.35
	1 Month	3.85	0.01	0.09	4.48	7E-3	0.12

All p-values are Greenhouse-Geisser corrected.

Supplementary Table 3. Follow-up mixed ANOVAs examining the interaction effect between measurement day and group (DLPFC gamma and Sham) for each serial position in Experiment 1, with and without covariates (age, sex, education, MoCA, GDS)

a. Between DLPFC gamma and Sham

		Without covariates			With covariates		
Interaction	Day	F	<i>p</i>	η_p^2	F	<i>p</i>	η_p^2
Day x Group	Primacy	7.47	3E-5	0.16	6.55	9.5E-5	0.17
	Middle 1	0.60	0.66	0.02	0.47	0.74	0.01
	Middle 2	0.40	0.81	0.01	0.35	0.84	0.01
	Middle 3	0.54	0.69	0.01	0.51	0.71	0.02
	Recency	2.26	0.09	0.06	1.93	0.13	0.06

b. Between IPL theta and Sham

		Without covariates			With covariates		
Interaction	Day	F	<i>p</i>	η_p^2	F	<i>p</i>	η_p^2
Day x Group	Primacy	0.46	0.74	0.01	0.55	0.67	0.02
	Middle 1	0.45	0.76	0.01	0.57	0.67	0.02
	Middle 2	0.58	0.69	0.02	0.69	0.60	0.02
	Middle 3	1.01	0.41	0.03	1.42	0.23	0.04
	Recency	5.12	4E-3	0.12	5.10	3E-3	0.13

All p-values are Greenhouse-Geisser corrected.

Supplementary Table 4. Results of Experiment 3

- a. Follow-up mixed ANOVAs examining the interaction effect between serial position and group (DLPFC gamma, IPL theta) for each measurement day, with and without covariates (age, sex, education, MoCA, GDS)

		Without covariates			With covariates		
Interaction	Day	F	<i>p</i>	η_p^2	F	<i>p</i>	η_p^2
Serial Position x Group	Baseline	0.65	0.59	0.02	0.88	0.47	0.04
	Day 1	0.76	0.53	0.03	0.56	0.66	0.02
	Day 2	4.00	9E-3	0.13	3.22	0.024	0.12
	Day 3	14.53	1.3E-7	0.34	13.21	1E-6	0.37

- b. Follow-up mixed ANOVAs examining the interaction effect between measurement day and group (DLPFC gamma, IPL theta) for each serial position, with and without covariates (age, sex, education, MoCA, GDS)

		Without covariates			With covariates		
Interaction	Day	F	<i>p</i>	η_p^2	F	<i>p</i>	η_p^2
Day x Group	Primacy	19.24	8.5E-8	0.41	15.56	2E-6	0.40
	Middle 1	0.19	0.87	0.01	0.28	0.80	0.01
	Middle 2	0.22	0.88	0.01	0.31	0.81	0.01
	Middle 3	2E-3	1	7.8E-5	0.05	0.98	2E-3
	Recency	4.82	4E-3	0.15	6.98	1E-3	0.23

All p-values are Greenhouse-Geisser corrected.