

ISRCTN17144095 — Basic results summary (interim)

Note: *this is an interim analysis from an ongoing trial (enrollment continuing toward the planned total of $n = 75$). A final results summary / publication link will follow upon study completion.*

1. Participant Flow

Enrolled and randomized: 44 (35 active dTMS, 9 sham), 4:1 allocation ratio per coil arm.

Coil allocation (not randomized): patients 1–10 received the double-cone coil (before the H7 coil became available); all subsequent patients received the H7 coil.

Excluded before imaging analysis ($n = 5$): 2 did not undergo post-treatment MRI (1 scanner incompatibility, 1 panic attack during scanning); 3 completed only the baseline visit.

Included in imaging analysis: 39 (32 active, 7 sham) with complete pre- and post-treatment resting-state fMRI.

Clinical dropouts ($n = 4$): 2 in the active group (common cold; alcohol misuse), 2 in the sham group (symptom worsening).

Included in clinical (Y-BOCS) response analysis: 32 active (14 responders, 18 non-responders) and 7 sham.

2. Baseline Characteristics

Full randomized sample ($n = 44$), by treatment arm:

Characteristic	Active ($n = 35$)	Sham ($n = 9$)	Overall ($n = 44$)
Age, years (mean $\pm$ SD, range)	35.7 $\pm$ 12.6 (18–65)	32.4 $\pm$ 12.0 (18–50)	35.0 $\pm$ 12.4 (18–65)
Sex, male (n , %)	18 (51.4%)	4 (44.4%)	22 (50.0%)
Sex, female (n , %)	17 (48.6%)	5 (55.6%)	22 (50.0%)
Baseline Y-BOCS score (mean $\pm$ SD, range)	26.4 $\pm$ 4.4 (20–35)	29.8 $\pm$ 5.5 (21–37)	27.1 $\pm$ 4.8 (20–37)

OCD illness duration was not available in the data provided and is not included in this table.

3. Outcome Measures

Primary outcome (per ISRCTN registration): neuronal predictors of therapeutic success of mPFC-dTMS, assessed via pre- to post-treatment change in grey matter (ACC, mPFC, OFC, striatum) and white matter (selected tracts and bundles). Not yet analyzed/reported; to follow upon completion of the full MASCOD sample.

Secondary outcomes (per ISRCTN registration): five further neuronal-predictor measures — (1) EEG resting-state oscillations; (2) ERN during the Flanker task; (3) resting-state functional connectivity (FC) of the ACC, striatum, and PFC/OFC; (4) fMRI activations during symptom-provocation and inhibitory-control tasks; (5) ACC-centred CSTC connectivity and regional E-field strength as predictors of symptom improvement. **Only secondary outcome 3 is reported in this interim analysis; outcomes 1, 2, 4 and 5 are not yet reported.**

Clinical outcome — Y-BOCS response ($\geq 35\%$ reduction in Yale-Brown Obsessive-Compulsive Scale total score from baseline, assessed post-treatment) — used to define the responder/non-responder groups referenced in secondary outcome 3 below. [Please confirm whether Y-BOCS response is itself separately registered on ISRCTN, so this can be labelled precisely.]:

Group	n	Responders	Response rate
Active (pooled)	32	14	43.8%
Sham	7	0	0.0%

Mean Y-BOCS reduction: 12.1 points (responders), 1.3 points (active non-responders), 1.4 points (sham).

Secondary outcome 3 (resting-state FC of ACC, striatum, PFC/OFC) — striatal seed-based functional connectivity change (post-treatment minus baseline; bilateral striatal seed; n = 39):

Contrast	Peak region	Peak T	p-FDR	Direction
Responders vs non-responders	Anterior cingulate/paracingulate cortex	-4.82	0.002	Responders ↓, non-responders ↑
Responders vs non-responders	Left inferior frontal gyrus, pars opercularis	-4.76	0.046	Responders ↓, non-responders ↑
Active (pooled) vs sham	Left central opercular/insular cortex	-5.32	0.001	Active ↓, sham ↑
Active responders vs sham	Left central opercular/insular cortex	-4.71	0.0003	Responders ↓, sham ↑

4. Harms / Adverse Events

Event	Group	n (%)
Common cold (led to withdrawal)	Active	1/35 (2.9%)
Alcohol misuse (led to withdrawal)	Active	1/35 (2.9%)
Symptom worsening (led to withdrawal)	Sham	2/9 (22.2%)

There were no deaths and no other serious adverse events reported in this trial to date.