

Using Transcranial Magnetic Stimulation (TMS) is a **feasible** and **safe** method to improve cognition in clients with moderate to severe methamphetamine use disorder.

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Pilot feasibility study with randomised control of dual site Theta burst Transcranial Magnetic Stimulation (TMS) for methamphetamine use disorder: Preliminary results of the TARTAN study

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Problem

Amphetamine-type stimulants, including methamphetamine (MA), are the second most used illicit drug class.



- Current standard of care relies on psychosocial interventions (e.g Cognitive Behaviour Therapy).
- New treatment modalities such as **Transcranial Magnetic Stimulation (TMS)** may increase the effectiveness of treatment.

Objective

Assess the **feasibility** and preliminary **safety** of using TMS for the treatment of moderate to severe MA use disorder in **outpatient** drug and alcohol settings.

Methodology

- Double-blinded Randomised Controlled Trial: 1:1 to Treatment (TMS) or control (Sham TMS)
- Population: Treatment seeking adults with moderate to severe MA use disorder
- Intervention: 3 treatments/week for 4 weeks
- Single site: Hunter New England LHD
- Recruitment: March 2022 - March 2023

Results

- N = 14
- Pre-screened=72
- Referred for consent=45
- Randomised=14
 - Treatment=6
 - Placebo=8
- All 14 completed minimum number of treatments

Adverse events

- Minor
 - Related to treatment (e.g. headache)=7
 - Not related to treatment=6
- Serious not related to treatment=1

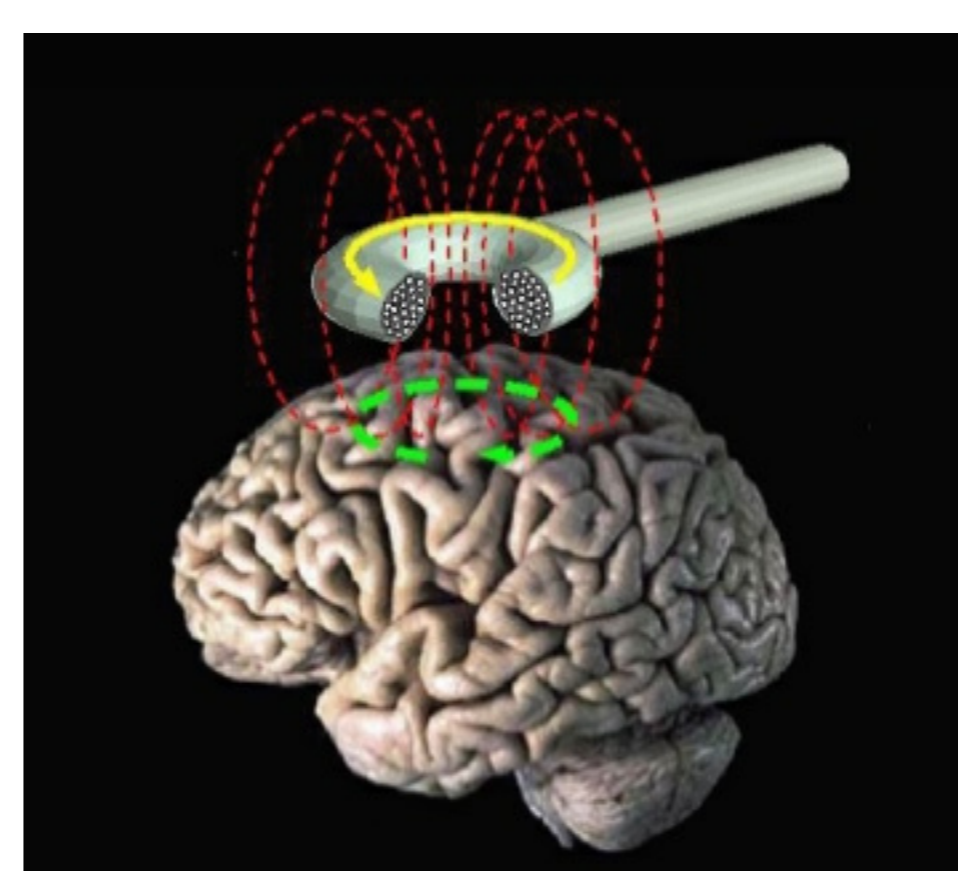


Table 1: Demographics

Demographic	Response	Placebo	Treatment
Sex at birth	Male	1 (13%)	4 (67%)
	Female	7 (88%)	2 (33%)
Indigenous status	Aboriginal but not TSI	2 (25%)	1 (17%)
	Aboriginal and TSI	0 (0%)	1 (17%)
Education	Year 7-9	2 (25%)	2 (33%)
	Year 10	1 (13%)	1 (17%)
	Year 12	0 (0%)	1 (17%)
	Vocational training	4 (50%)	2 (33%)
	Tertiary education	1 (13%)	0 (0%)

Table 2: Treatment acceptability

Item	Response	Placebo	Treatment
Confident TMS was worthwhile	Strongly agree	3 (60%)	1 (20%)
	Agree	2 (40%)	4 (80%)
Believe TMS helped reduce use of MA	Strongly agree	3 (60%)	1 (20%)
	Agree	0 (0%)	3 (60%)
	Unsure	2 (40%)	1 (20%)

Conclusions

TMS is a feasible, acceptable and resource intensive treatment for MA use disorder in an outpatient D&A setting.

