

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

For more information please contact Dr Buddhi Lokuge at buddhima.lokuge@health.nsw.gov.au

# 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

Buddhima Lokuge,<sup>1,2</sup> Tarun Yadav, Melissa A. Jackson,<sup>1,2,8</sup>Emma K. Austin, Amanda L. Brown, Bryan Paton, Marcia Sequeira, Martin Nean, Llewllyn Mills, Paul B. Fitzgerald<sup>6,7</sup> & Adrian J. Dunlop<sup>1,2,8</sup>

#### 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)**

## 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



#### 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	
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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.

1 Drug and Alcohol Clinical Services, Hunter New England Local Health District; 2 School of Medicine and Public Health, University of Newcastle; 3 School of Psychology, University of Newcastle; Hunter Medical Research Institute; 4 Discipline of Addiction Medicine, Central Clinical School, University of Sydney & South Eastern Sydney Local Health District, Drug and Alcohol Services; 5 The Langton Centre; 6 School of Medicine and Psychology, College of Health & Medicine, Australian National University; 7 Monarch Mental Health Group; 8 NSW Drug & Alcohol Clinical Research & Improvement Network, St Leonards, Australia

Randomised=14

Treatment=6Placebo=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

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.