



Image: ©NeuRA.edu.au

## BIPOLAR DISORDERS Factsheet

November 2021

### What is transcranial magnetic stimulation (TMS)?

TMS is a non-invasive method to stimulate nerve cells in superficial layers of the brain. Traditionally, studies assessing the effectiveness of TMS have been limited by small samples, a range of stimulation parameters and most studies lack long-term follow up assessments. Control comparisons also differ - 'sham' TMS may involve tilting the stimulation coil against the scalp by 45 or 90 degrees, thus reducing the degree of brain stimulation, or use of a "placebo" coil of identical appearance. These placebo methods usually involve a 'click' noise but no magnetic field and no twitching sensation on the scalp. Comparison groups may receive active TMS applied to other brain regions. The effects of differing dosage and duration of concurrent medication on TMS response is unclear.

### What is the evidence for TMS?

Moderate quality evidence finds improved clinical response, particularly for depression following high frequency (10 Hz) repetitive TMS over the left dorsolateral prefrontal cortex. There was no benefit for mania and little risk of switching to mania in people with bipolar depression.

Moderate to low quality evidence finds improved cognition post-treatment with high-frequency repetitive TMS over the left dorsolateral prefrontal cortex, although the findings were not significantly different to the improvements reported in sham conditions.

**For more information see the technical table**



**NeuRA**  
Discover. Conquer. Cure.

*NeuRA (Neuroscience Research Australia) is one of the largest independent medical and clinical research institutes in Australia and an international leader in neurological research.*

*Diseases of the brain and nervous system pose the greatest health, economic and social burden of any disease group because they are chronic, debilitating and have no known cures.*

*Medical research is the cornerstone of efforts to advance the health and wellbeing of families and the community. Our dedicated scientists are focussed on transforming their research into significant and practical benefits for all patients.*

*While we hope you find this information useful, it is always important to discuss any questions about bipolar disorder or its treatment with your doctor or other health care provider.*

### HOW YOUR SUPPORT HELPS

We are able to make significant advances due to the generosity of countless people. Your donation allows us to continue to work towards transforming lives. For information on how you can support our research, phone **1300 888 019** or make a secure donation at [www.neura.edu.au](http://www.neura.edu.au)