



# NeuRA

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## BIPOLAR DISORDERS Factsheet

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### What are glutamatergic modulators?

Glutamate receptor modulators, such as ketamine and memantine, have been suggested as potential treatments for bipolar disorder when there are sub-optimal responses to other pharmaceuticals. Currently approved treatments for bipolar depression (i.e. several mood stabilisers, antidepressants and antipsychotics) are thought to involve a number of different neurotransmitters such as serotonin, dopamine, and norepinephrine. There is emerging evidence that glutamatergic system dysfunction may also play an important role in the pathophysiology of bipolar depression, and that drugs targeting the NMDA (N-methyl-D-aspartate) glutamate receptor may have antidepressant effects.

### What is the evidence for adjunctive glutamatergic modulators?

Moderate quality evidence finds a medium-sized improvement in depression symptoms with N-acetylcysteine compared to placebo. Most studies reported no differences in adverse events. The result for depression was not consistently found across reviews due to differences in the included studies.

Moderate to high quality evidence finds no benefit of adjunctive memantine for depression or mania symptoms.

Only low quality evidence was found for adjunctive ketamine, with review authors suggesting it has the potential to have a rapid and transient antidepressant effect, although the efficacy of a single intravenous dose may be limited.

For more information see the technical table

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*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.*