



# NeuRA

Discover. Conquer. Cure.

BIPOLAR DISORDERS LIBRARY

## BIPOLAR DISORDERS Factsheet

July 2020

### What is mismatch negativity?

Mismatch negativity (MMN) is an auditory event-related potential that is generated when a stimulus feature deviates from the regularity of previous auditory stimuli. This deviance can be a simple physical characteristic, such as tone duration, intensity, frequency or location; or more abstract presentation characteristics, such as a lower tone in a series of ascending tones. In this way, MMN generation relies on the creation of an auditory (echoic) memory trace for the preceding tones, in order to identify the subsequent deviance. MMN is thought to be an automatic, pre-attentional process and functions as an index of auditory discrimination and echoic memory integrity. MMN is observed as the difference in ERP wave response to the standard stimuli and the deviant stimulus. Larger differences between standard and deviant stimuli and lower probability of deviant occurrence are both associated with larger MMN amplitude.

### What is the evidence for mismatch negativity in people with bipolar disorder?

High quality evidence shows a medium-sized effect of reduced MMN amplitude in frontal regions of people with bipolar disorder compared to controls without any psychiatric disorder.

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 [neura.edu.au](http://neura.edu.au).

NeuRA (Neuroscience Research Australia) Foundation  
T 1300 888 019 F +61 2 9399 1082  
ABN 57 008 429 961

**Margarete Ainsworth Building**  
Barker Street, Randwick NSW 2031  
PO Box 1165 Randwick Sydney NSW 2031 Australia

[neura.edu.au](http://neura.edu.au)