



# NeuRA

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## BIPOLAR DISORDERS Factsheet

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### How are physical anomalies relevant to relatives of people with bipolar disorder?

Relatives of people with bipolar disorder may show attenuated signs of the illness, such as physical features commonly identified with the disorder. These may include brain structural and/or functional anomalies as well as sleep disturbances.

### What is the evidence for physical anomalies in relatives?

Moderate quality evidence suggests relatives of people with bipolar disorder show increased grey matter volume in the right inferior frontal gyrus, the left supramarginal gyrus, and the left superior temporal gyrus compared to controls. Decreased grey matter volume was found in relatives in the right lingual gyrus, the right cerebellum, and the right superior frontal gyrus. There were decreases in white matter integrity in the right corpus callosum body, left corpus callosum splenium, and the left corticospinal tract.

Across all functioning tasks, relatives showed increased activation in the ventral anterior cingulate, right amygdala, and parahippocampal gyrus, and decreased activation in the right inferior parietal gyrus, left postcentral gyrus, and left superior parietal gyrus.

During cognitive tasks, relatives showed increased activation in the frontal lobe, right caudate, right inferior frontal gyrus, dorsal anterior cingulate, and left middle temporal gyrus/superior temporal gyrus and decreased activation in the parietal lobe. During emotion processing, relatives showed increased activation in the right amygdala, right parahippocampal gyrus, and right middle occipital gyrus. During reward processing, relatives showed increased activation in the anterior and medio-orbital parts of the prefrontal cortex.

Relatives showed a large increase in the P50 ratio compared to controls. The P50 ratio is measured with EEG and increases are indicative of reduced cortical inhibition. There was also higher relative amplitude of the sleep-wake cycle in relatives than in people with bipolar disorder.

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.*

## 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).