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SCHIZOPHRENIA Factsheet

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What are neurotrophins?

Neurotrophins, such as nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF), regulate neuronal survival and growth during development. Effects of neurotrophins on neuronal transmission in the hippocampus, cortex, cerebellum and basal forebrain are important for learning and memory processes. Reduced neurotrophins may affect synaptic efficiency and connectivity in schizophrenia that is hypothesised to underpin signs and symptoms of the disorder.

What is the evidence for neurotrophins?

Moderate to high quality evidence suggests reduced blood BDNF levels in people with schizophrenia compared to people without schizophrenia. This result remains regardless of symptom severity, medication dose, age, BMI, or study quality. First-episode or drug-free patients showed a larger reduction in BDNF levels than other patients. This may be explained by medication status, as blood BDNF levels increased after treatment with antipsychotics, although this effect was found only in plasma and not serum studies. There is also a small association between increased BDNF levels and increased performance on reasoning and problem solving, verbal memory, working memory, processing speed and verbal fluency tasks, and after non-pharmaceutical, non-exercise interventions.

Moderate to high quality evidence finds a medium-sized reduction in blood NGF levels in people with schizophrenia, regardless of medication status. More severe symptoms were related to greater NGF reductions.

For more information see the technical table

NeuRA
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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 schizophrenia 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/donate/schizophrenia**.

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