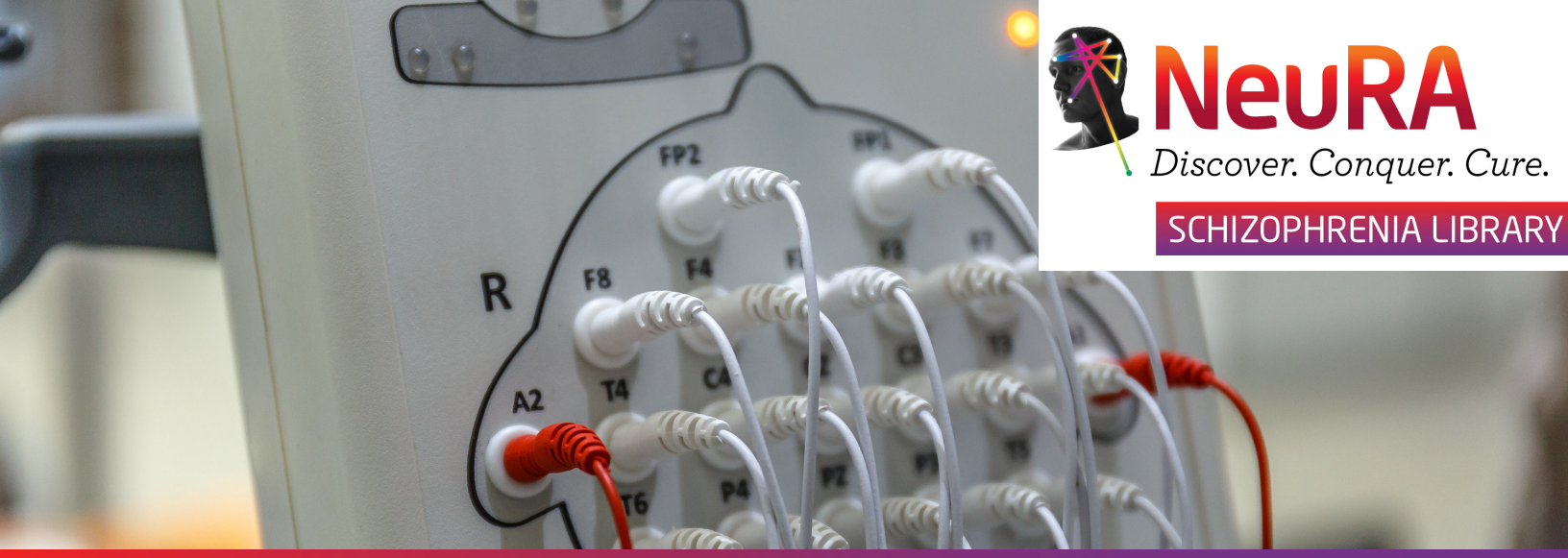

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SCHIZOPHRENIA Factsheet

October 2020

What is P50 event-related potential?

Some theories suggest that schizophrenia is associated with cognitive and perceptual deficits, which may be manifested as an inability to "gate" or inhibit irrelevant sensory information, ultimately leading to conscious information overload. The P50 event-related potential is interpreted as a physiological substrate for this deficit. In this paradigm, paired auditory clicks are presented, separated by a 500ms interval. A positive brain potential measured maximally over the vertex is observed using electroencephalogram (EEG) technology, with the vertex 50ms following the stimulus. The first click initiates or conditions the inhibition, while the second (test) click indexes the strength of the inhibition. P50 ratio is quantified as the amplitude of the response to the second click divided by the first. The absence of a reduced response to the second stimulus is interpreted as a failure of inhibitory mechanisms, postulated to represent a defect in sensory gating. Alterations in the P50 gating mechanism is proposed to have potential candidacy as an endophenotype (closer to genetic link than phenotype) for schizophrenia.

What is the evidence for P50 event-related potential?

Moderate to high quality evidence finds a large effect of increased P50 ratio in people with schizophrenia, and in relatives of people with schizophrenia, when compared to people without schizophrenia. There was also a small decrease in S1 amplitude (initial response to stimuli), and a medium increase in S2 amplitude (response after repeated exposure to stimuli). There were no differences in P50 latency, or in P50 ratios before versus after treatment with antipsychotics.

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 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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