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What is P300 event-related potential?

The P300 wave is an event-related brain potential measured using electroencephalography (EEG). P300 refers to a spike in activity approximately 300ms following presentation of the target stimulus, which is alternated with standard stimuli to create an 'oddball' paradigm, which is most commonly auditory. In this paradigm, the subject must respond only to the infrequent target stimulus rather than the frequent standard stimulus. The amplitude of the P300 response is proportional to the amount of attentional resource devoted to the task and the degree of information processing required, while the latency is considered a measure of stimulus classification speed, unrelated to behavioural response time.

What is the evidence for P300 event-related potential?

Moderate to high quality evidence suggests medium to large effects of reduced P300 amplitude and increased/delayed P300 latency in people with schizophrenia, and in non-psychotic relatives of people with schizophrenia when compared to controls. When comparing people with schizophrenia to non-psychotic relatives, there is a small effect of greater reduction in P300 amplitude and increased latency in people with schizophrenia. There was a greater reduction in amplitude in medication-free patients than in medicated patients, while latency increases were similar. Moderate quality evidence suggests the highest magnitude of difference was reported in electrodes corresponding to the parietal cortex, and was lateralised to the left hemisphere, with highest magnitude around the left temporal lobe. Increases in task difficulty may increase the effect size.

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.