Mismatch field latency, but not power, may mark a shared autistic and schizotypal trait phenotype.

Talitha C. Ford, Will Woods, David P. Crewther

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Mismatch field latency, but not power, may mark a shared autistic and schizotypal trait phenotype.

Talitha C. Ford\textsuperscript{a,*}, Will Woods\textsuperscript{b}, David P. Crewther\textsuperscript{a}

\textsuperscript{a}Centre for Human Psychopharmacology, Faculty of Health, Arts and Design, Swinburne University of Technology, Melbourne, Victoria, Australia

\textsuperscript{b}Brain and Psychological Science Research Centre, Faculty of Health, Arts and Design, Swinburne University of Technology, Melbourne, Victoria, Australia

Abstract

The auditory mismatch negativity (MMN), a preattentive processing potential, and its magnetic counterpart (MMF) are consistently reported as reduced in schizophrenia and autism spectrum disorders. This study investigates whether MMF characteristics differ between subclinically high and low scorers on the recently discovered shared autism and schizophrenia phenotype, Social Disorganisation.

A total of 18 low (10 female) and 19 high (9 female) Social Disorganisation scorers underwent magnetoencephalography (MEG) during a MMF paradigm of 50ms standard (1000Hz, 85%) and 100ms duration deviant tones. MMF was measured from the strongest active magnetometer over the right and left hemispheres (consistent across groups) after 100ms.

No differences in MMF power were found, however there was a significant delay in the MMF peak ($p=0.007$). The P3am (following the MMF) was significantly reduced across both hemispheres for the high Social Disorganisation group ($p=0.025$), there were no specific hemispheric differences in P3am power or latency. Right MMF peak latency increased with higher scores on the schizotypal subscales Odd Speech, Odd Behaviour and Constricted Affect.

Findings suggest that MMF peak latency delay marks a convergence of the autism and schizophrenia spectra at a subclinical. These findings have significant implications for future research methodology, as well as clinical practice.

Keywords: mismatch negativity, mismatch field, magnetoencephalography, autism, schizophrenia, Social Disorganisation

*Corresponding author

Email addresses: tcford@swin.edu.au (Talitha C. Ford), wwoods@swin.edu.au (Will Woods), dcrewther@swin.edu.au (David P. Crewther)
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