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### INDUCED GAMMA BAND DEFICITS IN EARLY PSYCHOSIS

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**Objective:** Abnormalities in event related potentials (ERPs) have long been looked at as markers of disease in Schizophrenia. Over recent years there is a trend in the field to move from averaged trials ERPs analysis in the time-voltage domain, to time-frequency single trials analysis. Oscillations in the Gamma band (30-50Hz) have received particular attention in the context of the theories of core deficits in neuronal synchronization in Schizophrenia. In this study we aimed at replicating previously found Gamma band deficits in a sample of Early Psychosis patients.

**Methods:** EEG was collected from 15 patients and 15 age matched controls using an auditory oddball paradigm. Time-frequency analysis in the Gamma band was performed using a Morlet wavelet transform. We tested differences between the groups using the Wilcoxon rank sum test, given the nonparametric nature of the data, to compare each group's average single trial Gamma power, maximizing the signal-to-noise ratio.

**Results:** Patients with Early Psychosis showed, following target tones, a reduction in the total power of Gamma band activation ( $p < 0.01$ ) as well as in induced Gamma band activation ( $p < 0.01$ ). This was observed in a late latency interval at 400-500ms. The late burst of Gamma activity was not found in the frequent condition, for neither subjects group.

**Conclusion:** The findings are compatible with previous studies suggesting deficits in the late intrinsically generated cognitive processing of auditory stimuli in Schizophrenia, already present in its early stage. They add further evidence of deficits in neuronal synchronisation in the early stages of psychotic disorders.