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VISUAL EVOKED RESPONSES TO A GAMMA-FREQUENCY FLICKER ARE ENHANCED IN ACUTE SCHIZOPHRENIA

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Disturbances of visual perception, such as illusions and hallucinations, are a hallmark of psychotic disorders. In perceptual processes, synchronous neuronal activity in gamma frequencies (> 30 Hz) is considered to play a major role. Steady-state visual evoked potentials (ssVEP) allow for testing the ability of the visual cortex to support synchronous neural responses to periodically flickering light. We employed photic stimulation at 40 Hz in order to specifically drive cortical gamma synchrony. In acute schizophrenia patients, compared to healthy control subjects, we found significantly increased evoked synchrony at 40 Hz, but decreased synchrony in the alpha band (8-13 Hz). Linear decomposition of ssVEP waveforms separated the activity of independent neural sources and revealed their different dynamics in the patients and the controls. The results indicate an aberrant processing of transient visual events in acute schizophrenia.