Auditory hallucinations in schizophrenia are associated with a neurophysiological deficit in early visual processing.

**Participants**

Schizophrenic patients who are prone to auditory hallucinations have a greater verbal working memory (WM) deficit on the auditory word serial position task (WSPT) when compared to non-hallucinators (NH). This implies a deficit in the integration of incoming perceptual information as reflected by N1 (i.e., a sensory or pre-attentive auditory processing deficit). However, this hypothesis has rarely been tested using event-related potentials (ERPs).

**Stimuli and Procedure**

- **Recognition Memory (RM)** paradigm involves the presentation of target words followed by a forced-choice task requiring the subject to indicate whether each presented word is new or old. ERPs are recorded for each paradigm (RM, WM), and CSD epochs focused on N1 (-50 .. 400 ms = 116 samples) submitted to a subsequent temporal principal components analysis (PCA) to identify relevant, data-driven components (Kayser & Tenke 2003).

**ERP Recording and Data Analysis**

- Using two existing ERP data sets recorded from a large sample of schizophrenia patients and controls, the dependency of surface potentials on a neuronal generator patterns underlying N1 was addressed. These limitations can be overcome by combining the surface potentials with other imaging techniques to derive a more comprehensive understanding of the underlying neuronal processes.

**Summary and Conclusions**

- These findings extend previous reports of auditory N1 reductions in patients with auditory hallucinations, suggesting a broader early perceptual deficit that is not limited to the auditory modality and occurs during both verbal and nonverbal neurocognitive tasks.

**References**