Sensory gating in adult with attention-deficit/hyperactivity disorder: Event-evoked potential and perceptual experience reports comparisons with schizophrenia

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Background
In daily life, adults with attention-deficit/hyperactivity disorder (ADHD) report abnormal perceptual experiences that can be related to sensory gating deficit. This study investigated and compared P50 suppression (a neurophysiological measure of sensory gating) and perceptual abnormalities related to sensory gating deficit in ADHD and schizophrenias patients.

Methods
Three groups were compared: 24 adults with ADHD, 24 patients with schizophrenia and 24 healthy subjects. The Sensory Gating Inventory (SGI), a validated self-report questionnaire, was used to measure perceptual abnormalities related to sensory gating deficit. P50 suppression was measured by P50 amplitude changes in a dual-click conditioning-testing auditory event-related potential procedure.

Results
Adults with ADHD had significantly higher scores on the SGI and significantly lower P50 suppression than healthy subjects. These deficits were similar to those found in patients with schizophrenia. A correlation was found between both the SGI and P50 suppression data in adults with ADHD and patients with schizophrenia.

Discussion
The findings confirm previous results found in patients with schizophrenia. Moreover, adults with ADHD, similar to patients with schizophrenia, had abnormal P50 suppression and reported being flooded with sensory stimuli. Abnormal neurophysiologic responses to repetitive stimuli gave rise to clinically abnormal perceptions.