

Scientific Article



Title

An exploratory event-related potential study of multisensory integration in sensory over-responsive children

Language: EN

Authors

Barbara A. Brett-Green; Lucy J. Miller; Sarah A. Schoen; Darci M. Nielsen.

1 Sensory Processing Disorder Foundation, Greenwood Village, CO, USA

2 Department of Physical Medicine and Rehabilitation, University of Colorado Denver, Denver, CO, USA

3 Department of Pediatrics, University of Colorado Denver, Denver, CO, USA

4 Doctoral Program in Pediatrics, Rocky Mountain University of Health Professionals, Provo, Utah, USA

Abstract

A type of sensory processing disorder (SPD) where hypersensitivity to sound is often diagnosed misophonia or hyperacusis where person have adverse physical reaction to sound. Sensory processing disorder is a heterogeneous clinical condition characterized by a range of atypical behavioral responses to ordinary sensory stimulation. Three primary patterns of the disorder with six total subtypes have been proposed (Miller et al., 2007). This study specifically examines a clinical sample of children with behavioral symptoms of sensory over-responsivity. Descriptions of the behavioral symptoms indicate children with SOR feel over-whelmed by sensory input, and display “fight or flight” and defensive responses to one or more types of sensory stimuli. Prevalence research suggests that between 5% and 16% of school age children have negative responses to sensation that interfere with participating in daily life activities (Ahn et al., 2004, Ben-Sasson et al., 2009). Commonly reported symptoms of sensory over-responsivity include sensitivity to sound and touch (Ben-Sasson et al., 2009, Goldsmith et al., 2006). The effects of over-responsivity can be profound, impacting a child and family's quality of life, and interfering with engagement in social interactions, participation in home and school routines, self-regulation, and self-esteem (Cohn et al., 2000, Lane, 2002). In the present study, high resolution ERP recordings were used to investigate auditory–somatosensory MSI in a referred sample of children clinically identified with SOR. A widely accepted method that compares ERP responses to multisensory stimulation with the sum of unisensory ERP responses was used (Di et al., 1994; see Calvert and



Co-funded by the
Erasmus+ Programme
of the European Union

Project number: 2021-1-BE02-KA220-VET-000034849

Scientific Article



Thesen, 2004, Foxe et al., 2000, Murray et al., 2005; see Stein and Meredith, 1993, Teder-Sälejärvi et al., 2002, Talsma and Woldorff, 2005, Giard and Peronnet, 1999).

Source

Elsevier, ScienceDirect: Brain Research, Volume 1321.

Link

Retrieved January, 2023 from:

<https://www.sciencedirect.com/science/article/abs/pii/S0006899310001137?via%3Dihub>



Co-funded by the
Erasmus+ Programme
of the European Union

Project number: 2021-1-BE02-KA220-VET-000034849