Physiological Responses of Adults with Sensory Over-Responsiveness
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Introduction
- Individuals with SOR, the most common sensory modulation disorder, describe daily life experiences as irritating, overwhelming, disorganizing and distracting (Kinnealey, Koenig & Smith, 2011)
- Stimulation from the environment is interpreted through our body’s senses and causes automatic, unconscious changes in our physiological responses

Purpose
- To compare typically functioning adults who self-report as low or high in sensory over responsivity (SOR)
- To validate the sensory experiences of these adults and assist practitioners in properly addressing them

Research Design
- n=17* → Experimental Group (high SOR) = 8, Control Group (low SOR) = 9
- Inclusion: Typical, English speaking adults 18-64 years old and AASP scores
- Exclusion: Cognitive or mental diagnoses and medications that influence the autonomic nervous system

* Researchers originally recruited n= 22, however, five participants were removed due to not meeting re-qualification criteria

Measures and Methods
- **Group Determination**: Adolescent/Adult Sensory Processing (AASP) and Sensory Response Questionnaire (SRQ) scores
- **Outcome**: Electrical Dermal Response (EDR) to 12 different sensory stimuli across three different modalities

**Sensory Challenge Protocol**
- **Auditory**: Crickets, Lawnmower, Baby crying, Pure Tones
- **Tactile**: Cotton Puff, Nuk Brush, Feather
- **Olfactory**: Camphor, Orange, Butyric Acid

Results
- **Electrodermal Responses**
- Groups differed significantly on the AASP and SRQ at P < 0.001
- High SOR group had a larger EDR; however, this difference was not significant
- EDR to the lawn mower trended towards significant group differences, EDR to 3000 Hz and Nuk Brush had moderate effect sizes
- There are strong correlations for inter-stimuli EDR, the way an individual responds to one or a few stimuli is predictive of how that individual will respond to other stimuli

Conclusion
- **Groups differed significantly on the AASP and SRQ at P < 0.001**
- **High SOR group had a larger EDR**; however, this difference was not significant
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Limitations
- Small sample size, limited geographic sampling
- Inadequate inclusions/exclusion sampling
- The use of EDR as an objective measure for SOR is neither strongly supported nor denied

Implications for Practice
- The AASP & SRQ can be used in conjunction to determine a client’s SOR status
- EDR can be a useful tool to justify the experiences of these adults for other practitioners in future studies
- The way an individual responds to one stimuli can be generalized to how they will respond to all stimuli
- Occupational therapists are best suited to work with individuals with high SOR through task analysis and education of coping strategies

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