Title: Parent-Child Engagement and Sensory Responsiveness in Infants at High Risk for Autism Spectrum Disorder


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Purpose: Many children with autism spectrum disorder (ASD) demonstrate atypical patterns of responding to sensory stimuli (i.e., differences in sensory responsiveness). One such pattern is sensory seeking, which refers to behaviors that serve to intensify or extend a sensory experience (e.g., licking, smelling, sighting, or repeated touching or banging of objects). It has been proposed that differences in sensory responsiveness may emerge early in life and produce cascading effects on the development of higher-level skills in children with ASD. Recent work in our laboratories prospectively following infants at heightened familial risk for ASD based on their status as infant siblings of children diagnosed with the disorder (i.e., Sibs-ASD) has provided preliminary support for this theory of “cascading effects.” Specifically, we found that early sensory seeking predicted future social deficits in Sibs-ASD. This effect appeared to be explained by reduced social orienting. We hypothesize, however, that the association between early sensory seeking and future social symptomatology may be better explained by the influence of sensory seeking on a child’s tendency not just to orient towards, but rather to engage with and learn from, others in their environment. As a first step towards testing this hypothesis, the present study explores concurrent associations between sensory seeking and parent-child engagement in Sibs-ASD and infants at relatively lower, general population level risk for ASD (Sibs-TD).

Methods: Preliminary analyses were conducted on 20 infants and toddlers between the ages of 7 and 17 months (10 Sibs-ASD, 10 Sibs-TD). Groups were well matched on sex (5 males in each group) and mental age ($M_{age} = 10.7$mo for Sibs-TD and 11.6mo for Sibs-ASD). Sensory seeking was measured with the Sensory Experiences Questionnaires (SEQ). Additionally, seeking was measured using the Sensory Processing Assessment (SPA); these observational samples will be coded and available for inclusion in final analyses for the Gatlinburg Conference. Parent-child engagement scores were coded from two 15-minute parent child free-play (PCFP) videos. Each video was coded by two independent, blinded coders to derive indices of two types of engagement: total time spent in higher-order supported joint engagement (HSJE; wherein the caregiver influences child’s play, and the child acknowledges the caregiver by engaging in reciprocal play) and total time spent in lower order supported joint engagement (LSJE; wherein the caregiver appears to influence child play, but the child does not actively acknowledge the caregiver by engaging in reciprocal play) across each PCFP. The total time spent in supported joint engagement (Total SJE) was also calculated as the sum of time spent in HSJE and LSJE. All metrics were averaged across coder and session to create aggregate engagement scores.

Results: Preliminary results (based on parent reports of sensory differences only) show that sensory seeking is associated with HSJE across groups ($r = 0.33$), indicating that more sensory seeking behavior is associated with more time spent in HSJE, on average across Sibs-ASD and Sibs-TD groups. However, this correlation was moderated by group, such that more sensory seeking behaviors (to the extent they were displayed) were associated with more time spent in HSJE in the Sibs-TD group ($r = 0.57$) but not in the Sibs-ASD group ($r = 0.05$). The relation between seeking and total SJE was also moderated by group, such that more sensory seeking was associated with more time spent in SJE in the Sibs-TD group ($r = 0.58$), but greater sensory seeking was associated with less time spent in SJE in the Sibs-ASD group ($r = -0.37$). Final analyses, including results from observational measures of sensory seeking behavior, will be presented at the Gatlinburg conference.

Discussion: Preliminary results indicate that sensory seeking may be linked with engagement, but that these associations likely vary according to risk group and may not always be in the anticipated direction. Implications for research, theory, and practice will be discussed.
References/Citations:


