Functional analysis and underlying processes of challenging behaviours and atypical sensory processing in children with autism spectrum disorder and intellectual disability

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Background: Atypical sensory processing- defined as difficulties in modulating, integrating, organising, and discriminating sensory input-, has become a critical diagnosis criterion for Autism Spectrum Disorder (ASD) (Ausderau et al., 2016; Dunn, 1997; MacLennan et al., 2022; Werkman et al., 2023). It is usually conceptualised around 4 major patterns: *sensation seeking*, *low registration*, *sensory avoidance*, and *sensory sensitivity* (Dunn, 1997, 2007). It has been hypothesised that atypical sensory processing may be related to behavioural profiles of people with ASD and more specifically may lead to challenging behaviours (CB) (Gonthier et al., 2016; Griffin et al., 2022). CB are defined as culturally inappropriate behaviours due to their intensity, frequency, or duration (Emerson, 2001) and represent a major clinical issue for people with ASD as their prevalence is estimated at over 40%, or even higher in case of people also having a diagnosis of intellectual disabilities (ID). To date, few studies have systematically targeted the nature of relations between sensory and behavioural profiles, but some data suggest that these relations may be considered through a functional perspective; meaning that the function of CB could be to avoid or seek out certain sensory stimuli (Lancioni et al., 2012; Suchowierska-Stephany, 2024). As such, sensory processing may therefore play an important role in terms of stimulation and reinforcement (Lancioni et al., 2012; Tevis & Matson, 2022). Besides, the question of these relations in other neurodevelopmental disorders remains open (Werkman et al., 2023). Indeed, a growing body of evidence suggests that atypical sensory processing is not unique to ASD and may be considered as a transdiagnosis feature, particularly within neurodevelopmental disorders (Van de Boogert et al., 2022). Bridging the gap between sensory processing and challenging behaviours therefore should include a transversal perspective on neurodevelopmental disorders. **Aim & Method:** The aim of this study systematically investigated the association between the sensory profile of children aged 6 to 12 with a diagnosis of ASD and ID followed by a mobile intensive care team for severe behavioural problems. Within this team, routine care data (RCD) include assessment of sensory profiles as well as psychometric and clinical (functional) assessments of challenging behaviours prior intervention. Through a retrospective study (on an expected sample including between 100 to 200 children), we will explore the relations between behavioural disorders with a cause (function) of sensory seeking or avoidance with a broader assessment of the individual's sensory profile.

Results: Analysis are ongoing and will be presented during the conference.