Do maternal cortisol levels as well as infants' cortisol levels influence language development at twelve months of age?

E. Reisenberger[1,2], J. Preiß[1,3], M. Reimann[1,2], C. Florea[1,3], M. Schabus[1,3], M. Angerer[1,3] & D. Roehm[1,2]

[1]Centre for Cognitive Neuroscience Salzburg (CCNS), University of Salzburg; [2]Research Group Neurobiology of Language, Department of Linguistics, University of Salzburg; [3]Laboratory for Sleep, Cognition and Consciousness Research, Department of Psychology, University of Salzburg

The influence of stress experienced by both mothers and infants before and after birth has been shown to affect a child's language and overall cognitive development (Caparros-Gonzales et al., 2019; Finegood et al., 2017; Mumm et al., 2023). Notably, elevated levels of cortisol, the primary stress hormone, have been identified to have an impact on children's neurodevelopment (Caparros-Gonzales et al., 2019; Finegood et al., 2017). Recent research highlighted a positive association between higher prenatal maternal cortisol levels, measured through fasting blood samples, and early language development in children, assessed through parental reports (Mumm et al., 2023). The aim of the present study is to further evaluate the association between pre- and postnatal hair cortisol levels and infants' language abilities at the age of twelve months. Hair samples were collected from German-speaking mothers and their children (target sample n = 35) at two weeks and twelve months after birth to measure cortisol levels. The infants' receptive and expressive language skills at twelve months of age were assessed using the Bayley Scales of Infant and Toddler Development, Third Edition (Bayley-III; Reuner & Rosenkranz, 2014). Building upon previous research, we expect higher pre- and postnatal maternal cortisol levels to positively affect infants' language and cognitive development at the age of one year. Conversely, we hypothesize that elevated pre- and postnatal hair cortisol levels in infants will be associated with lower language abilities. Results will be added soon.