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Executive Function in Infants and Toddlers born Low Birth Weight (LBW) and Preterm: A Longitudinal Study

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Keywords

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Abstract

The goal of this study was to extrapolate early indicators of executive function (EF) from traditional infant/toddler assessments for purposes of early identification. Infants born LBW (N=99) were assessed across three age periods (6 corrected-age in months, 18 corrected age in months, and 3 years). The control group (full-term), N=41) were assessed during these same intervals. Children were administered the Bayley Scales of Infant and Toddler development (BSID-III), the Dimensions of Mastery Questionnaire (DMQ-18), and the Behavior Rating Scale of Executive Function (BRIEF-P) at age 3 years. results at age 3 showed that children in the full-term group scored statistically significantly higher on the BSID-III on all scaled and composite scores. Using multivariate analysis, we found significant differences on BSID III scaled subtests based on change scores between 6 and 18 months, and between 18 months and 3 years, children who were full-term showed significantly larger, positive average difference scores, compared to the LBW group. LBW difference scores on the motor composite and fine motor showed a negative difference, meaning the average scores decreased. Ef components extracted from the infant assessments were also significant. AT 6 months, full-term children demonstrated more attention to tasks, At 18 months, full-term children demonstrated the ability to inhibit behaviors more than their LBW and preterm peers. At age 3 years, full-term children showed higher scores in attention, working memory, and plan/organize. Key outcomes include: Early indicators of EF were identified across three age periods. Change scores indicated that children who were LBW and preterm lost skills at 22 age periods (18 months and 3 years).