

United States Neurodevelopmental Outcomes of Zika Virus-Exposed Preschoolers

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BACKGROUND

Children with in utero Zika virus (ZIKV) exposure without congenital Zika syndrome (CZS) may be at risk for neurodevelopmental delays (Mulkey et al., 2020). Outcomes for preschool-age children with in utero ZIKV exposure have not yet been reported in the United States.

OBJECTIVE

This prospective cohort study was conducted at Children's National to assess differences in neurodevelopment between ZIKV-exposed children without CZS (**cases**) and healthy, unexposed children (**controls**) at ages 4-5 years in a United States cohort.

METHODS

Child development was assessed using the **ZIKV Outcome Toolbox (TABLE 1)** (Mulkey et al., 2022). Standard scores were compared between cohorts. P-values were adjusted using the false discovery rate (FDR).

TABLE 1: ASSESSMENTS AND RESULTS	
ZIKV Outcome Toolbox Assessment	Differences between Cases and Controls
BRIEF-P Behavior Rating Inventory of Executive Function	No differences
MABC Movement Assessment Battery for Children	Cases showed a trend toward lower performance in all categories and total scores. (composite score FDR p=0.11)
PEDI-CAT Pediatric Evaluation of Disability Inventory	No differences
BSRA Bracken School Readiness Assessment	Cases showed a trend toward lower school readiness in sizes/ comparisons, shapes, and total scores. (FDR p≤0.13)
PPVT Peabody Picture Vocabulary Test	No differences
Parent Surveys Demographics, Medical History	Controls (A) had greater parent education than cases (B). (College education: (A) 92% of mothers and 67% of fathers; (B) 64% and 46%, respectively)

RESULTS (see TABLE 1)

Fourteen cases were evaluated at mean (SD) age 5.0 (0.4) years; 12 controls at 4.8 (0.4) years. Three cases had global developmental delay or autism spectrum disorder and were unable to complete the Toolbox. **TABLE 1** outlines differences in standard scores between the remaining cases and controls for each assessment.

CONCLUSIONS

In utero ZIKV exposure may present risks for neurodevelopmental delays. Higher parent education in controls, small sample size, and COVID-19 may partially explain some outcomes. Continued follow-up is needed to understand long-term impacts; we will follow these cases and controls through age 7 (NICHD: R01HD102445).

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