

E. NYGAARD, K. SLINNING, V. MOE & K.B. WALHOVD. Cognitive Abilities of Children Prenatally Exposed to Opiates and Polysubstances: A Longitudinal Study.

Objective: Previous studies have found young children exposed to maternal opioid and polysubstance use in utero are at increased risk for neuropsychological difficulties. The study investigated whether these waned, persisted, or increased over time, and to what extent such perinatal vulnerability could be compensated by being raised in optimized conditions.

Participants and Methods: In the present study, 60 children with substance exposure and 48 control children without known prenatal risk were followed longitudinally. The most common main drug of choice among the pregnant mothers was opiates ($n = 31$). The children's general cognitive abilities were assessed at 1, 2 and 3 yrs of age using the Bayley-II Mental Development Index, at 4 ½ yrs using the McCarthy General Cognitive Index, and at 8 ½ yrs using the WISC-R Total IQ.

Results: Children with prenatal drug exposure had significantly ($p < .05$) lower cognitive abilities than children in the control group at all time points ($M = 96.1$, $SD = 17.0$ and $M = 116.1$, $SD = 14.2$, respectively, at 8 ½ yrs, $p < .001$). Mixed effects models showed that the group difference was stable from 1 to 3 yrs of age but increased between 3 and 8 ½ yrs. The group difference at 8 ½ yrs was significant even after controlling for earlier cognitive abilities in regression analyses. The group differences remained when assessing only exposed children who moved to stable adoptive/foster homes before 1 yr of age ($n = 50$). The study could not isolate effects of prenatal substance exposure.

Conclusions: However, the results indicate that children exposed to opioid and polysubstance abuse in utero do not cognitively "catch-up" over time. Instead, risk effects appear to increase with age, even in adoptive/foster children with minimal postnatal risk. As the complexity of the learning environment and social relationships increases over time, there may be transactional processes in which neurobiological vulnerabilities become increasingly important with respect to various aspects of children's functioning.

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