Neurocognitive and neurodevelopmental impact of prenatal methamphetamine exposure: A comparison study of prenatally exposed children with nonexposed ADHD peers.

Brinker MJ, Cohen JG, Sharrette JA, Hall TA.


Abstract

Prenatal methamphetamine exposure has become an increasingly pervasive concern, especially in rural-based populations and populations of lower socioeconomic status. While research has begun to highlight the effects of prenatal methamphetamine exposure, the long-term impact of this exposure remains an under-investigated topic. This study attempts to investigate the neurocognitive and neurodevelopmental effects of prenatal methamphetamine exposure by comparing the index and full-scale IQ scores on the WISC-IV between a sample of clinically referred children prenatally exposed to methamphetamine (N = 80) and a sample of clinically referred nonexposed children diagnosed with ADHD (N = 44). Children prenatally exposed to methamphetamine showed significantly lower scores on all WISC-IV domains when compared to peers with ADHD. When taking into account polysubstance exposure to alcohol, these differences remained statistically significant, with the exception of the Processing Speed Index (PSI); children reported to have been prenatally exposed to methamphetamine and to alcohol (PME) remained below ADHD peers on all other WISC-IV index scores. Within the prenatally exposed sample, regression analyses indicated that age was a significant negative predictor of PSI scores. Overall findings suggest that prenatal methamphetamine exposure is associated with a notable cognitive impact independent of polysubstance exposure to alcohol, and that the impact of this exposure on processing speed skills may become more pronounced with age.