

Intrauterine Effects of Maternal Pre-pregnancy Overweight on Child Cognition and Behaviour in 2 Cohorts

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Objective: Greater maternal pre-pregnancy adiposity has been associated with behavioral problems, such as attention-deficit/hyperactivity disorder, and lower intellectual function in offspring. However, few studies of humans have explored this, and it is unclear if intrauterine

Patient and Methods: Parental adiposity and offspring verbal skills, nonverbal skills and behavioral problems were assessed in the British Avon Longitudinal Study of Parents and Children (ALSPAC n = approx 2500) and Dutch Generation R cohorts (n = approx 5000). We aimed to determine the plausibility of intrauterine effects by (1) adjusting for multiple confounders, (2) comparing associations between maternal and paternal overweight with offspring cognition/behaviors, and (3) searching for cross-cohort consistency.

Results: Maternal prepregnancy overweight was associated with reduced child verbal skills (unadjusted). However, after adjusting for confounders, this result was not consistently observed in both cohorts. Maternal overweight was also associated with child total behaviour problems and externalizing problems even after adjusting for con-founders. However, this was observed in Generation R only and was not replicated in the British Avon Longitudinal Study of Parents and Children. No associations of maternal overweight with child attention problems, emotional/internalizing problems, or nonverbal skills were observed in either cohort. Paternal overweight was not associated with any of the child outcomes but was also less strongly related to potential confounding factors than was maternal overweight.

Conclusions: Overall, we found little consistent evidence of intrauterine effects of maternal prepregnancy overweight on child cognition and behaviour. Some associations initially observed were not consistently replicated across cohorts or robust to adjustment for confounding factors and, thus, are likely to reject confounding by socioeconomic or postnatal factors.

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