Gestational weight gain, prepregnancy body mass index and offspring attention-deficit hyperactivity disorder symptoms and behaviour at age 10.

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Abstract

OBJECTIVE:
To assess offspring attention-deficit hyperactivity disorder (ADHD) symptoms and emotional/behavioural impairments at age 10 years in relation to maternal gestational weight gain (GWG) and prepregnancy body mass index (BMI).

DESIGN AND SETTING:
Longitudinal birth cohort from Magee-Womens Hospital, Pittsburgh, Pennsylvania (enrolled 1983-86).

POPULATION:
Mother-infant dyads (n = 511) were followed through pregnancy to 10 years.

METHODS:
Self-reported total GWG was converted to gestational-age-standardised z-scores. Multivariable linear and negative binomial regressions were used to estimate effects of GWG and BMI on outcomes.

MAIN OUTCOME MEASURES:
Child ADHD symptoms were assessed with the Conners' Continuous Performance Test. Child behaviour was assessed by parent and teacher ratings on the Child Behaviour Checklist (CBCL) and Teacher Report Form, respectively.

RESULTS:
The mean (SD) total GWG (kg) was 14.5 (5.9), and 10% of women had a pregravid BMI ≥30 kg/m2. Prepregnancy obesity (BMI of 30 kg/m2) was associated with increased offspring problem behaviours including internalising behaviours (adjusted β 3.3 points, 95% CI 1.7-4.9), externalising behaviours (adjusted β 2.9 points, 95% CI 1.4-4.6), and attention problems (adjusted β 2.3 points, 95% CI 1.1-3.4) on the CBCL, compared with normal weight mothers (BMI of 22 kg/m2). There were nonsignificant trends towards increased offspring impulsivity with low GWG among lean mothers (adjusted incidence rate ratio 1.2, 95% CI 0.9-1.5) and high GWG among overweight mothers (adjusted incidence rate ratio 1.7, 95% CI 0.9-2.8), but additional outcomes did not differ by GWG z-score. Results were not meaningfully different after excluding high-substance users.

CONCLUSIONS:
In a low-income and high-risk sample, we observed a small increase in child behaviour problems among children of obese mothers, which could have an impact on child behaviour in the population.

TWEETABLE ABSTRACT:
Maternal obesity is associated with a small increase in child behaviour problems.