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Smoking in pregnancy and children's body weight

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Background: Obesity is increasing in children and adolescents in different countries. To study this problem, we analysed the relationship between smoking during pregnancy and children's body weight in the first years of life.

Hypothesis: We hypothesized that maternal smoking is related to lower infant birth weight but higher weight gain in the first years of life.

Methodology: We report on findings using a large birth cohort for which yearly data on child health and development are being collected in the province of Quebec (Canada). The Quebec Longitudinal Study of Child Development (QLSCD) follows a representative sample (n=2,103) of children born in Quebec in 1998. We analysed the relationship between maternal smoking during pregnancy and weight change in the first years of life.

Data on birth weight (from medical records) and measured weight and height at 4 and 6 years provide the basis for our analysis of the determinants of weight change from birth to 6 years, which takes into consideration a broad range of social, familial, behavioural (nutrition, physical activity), and health factors.

Results: The relationship between smoking during pregnancy and weight gain in the first years of life is influenced by different social and behavioural factors. Children from smoking mothers, born with a normal weight, are more likely to be overweight at school entry.

Implications: These results indicate that smoking during pregnancy may affect the future health of children even if they are born with a normal weight.