

ARCHIVES OF DISEASE IN CHILDHOOD

Smoking in pregnancy and overweight may set up social divide in child obesity rates

First study of its kind shows importance of early life factors, say researchers

Smoking during pregnancy and being overweight before becoming pregnant account for a sizeable proportion—around 40%—of the persistent social divide in childhood obesity rates, finds research published online in the ***Archives of Disease in Childhood***.

It is well known that overweight and obesity are more common among children from disadvantaged backgrounds, but it's not known how much of a role early life factors might have in this.

The research team estimated the risk of overweight or obesity at the age of 11 among almost 12,000 children according to their socioeconomic circumstances at birth

All the children were part of the Millennium Cohort Study, which is tracking the long term health of children born in the UK between September 2000 and January 2002.

The children's weight and height were measured when they were 11 years old. The researchers also looked at the potential impact of a range of factors from responses to detailed questionnaires their mothers had completed.

These factors included whether the mother was overweight before the pregnancy and whether she smoked during it; the birthweight of the child; whether the child was born prematurely or by caesarean section; whether the child was breastfed; and how soon s/he was weaned onto solid foods.

In all, complete data were available at both time points for 9424 (80%) of the children.

By the age of 11 one in five of the children whose mums had fewer qualifications were overweight compared with one in four of those whose mums were better educated—to degree level or higher.

After taking account of other influential factors, including black/Asian/mixed race, older maternal age (30 and above), overweight before pregnancy, smoking during pregnancy, high birthweight, absence of breastfeeding, and weaning onto solid foods before the child was 4 months old were all significantly associated with an increased risk of overweight by the time s/he had reached the age of 11.

Socioeconomic circumstances at birth, as measured by the mother's educational attainment, remained significant after adjusting for all other influential factors.

But when just weight before pregnancy and smoking during it were included, these two factors alone accounted for 40% of the difference in the risk of overweight between children whose mums had fewer qualifications and those whose mums were educated to at least degree level.

This suggests that "a considerable amount of the social inequalities in pre-adolescent overweight can be explained by these two variables," write the researchers.

They caution that the association between the mum's weight before pregnancy and the child's weight by the age of 11 may reflect influences that can't be modified, such as genes. And they point out that smoking may itself be a proxy for disadvantage.

However, the more heavily the mum smoked during her pregnancy, the greater was the risk of overweight in her child by the age of 11, even after taking account of other potentially influential factors.

"Policies to support mothers to maintain a healthy weight, breastfeed and abstain from smoking during pregnancy are important to improve maternal and child health outcomes, and our study provides some evidence that they may also help to address the continuing rise in inequalities in childhood overweight," they conclude.