

# Improving health before pregnancy could be key to the prevention of childhood obesity

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Juan Carreño de Miranda's "La monstrua desnuda" (The Nude Monster) painting.

A new study from the University of Southampton adds to a growing body of evidence that links a child's early environment before and soon after birth to their chance of becoming obese later in life.

Previous studies have identified a number of individual [early life 'risk factors'](#) but few have evaluated the size of their combined effects.

The new research suggests that having a greater number of these risk factors is a strong predictor of being overweight or obese in childhood.

Scientists from the Medical Research Council Lifecourse Epidemiology Unit at the University of Southampton looked at five early life obesity risk factors: a short duration of breastfeeding (less than one month) and four maternal factors during pregnancy - obesity, excess pregnancy weight gain, smoking, and low vitamin D status.

Published today in *The American Journal of Clinical Nutrition*, the research shows at age four, children with four or five of these factors were 3.99 times more likely to be overweight or obese than children who had experienced none, and [fat mass](#) was, on average, 19 per cent higher.

By age six, the risk increased so that these children were 4.65 times more likely to be overweight or obese and fat mass was 47 per cent higher. Importantly, these differences were not explained by other factors, such as the children's quality of diet or [physical activity levels](#).

The data analysed came from 991 children taking part in the Southampton Women's Survey - one of the largest studies of mothers recruited before pregnancy, along with their infants and children.

Professor Sian Robinson, who led the study, says: "Early life may be a 'critical period' when appetite and regulation of energy balance are programmed, which has lifelong consequences for the risk of gaining excess weight. Although the importance of early prevention is recognised, much of the focus is on school-aged children. Our findings suggest that interventions to prevent obesity need to start earlier, even before conception, and that having a healthy body weight and not smoking at this time could be key."

Professor Cyrus Cooper, Director of the MRC Lifecourse Epidemiology

Unit comments: "This study is a very good example of the programme of multidisciplinary research being conducted at the Unit, in which we are seeking to understand the role of the mother's diet and lifestyle as influences on the development and body composition of her child.

"The large differences in the risk of being overweight in childhood that were shown in this study highlight the importance of early life risk factors. These findings could have important implications for obesity prevention policy and will help us to design future interventions aimed at optimising body composition, with benefits for lifelong health."

The study Modifiable early life risk factors for childhood adiposity and overweight: an analysis of their combined impact and potential for prevention was funded by the Medical Research Council, British Heart Foundation, Food Standards Agency and Arthritis Research UK.

**More information:** Modifiable early life risk factors for childhood adiposity and overweight: an analysis of their combined impact and potential for prevention, *The American Journal of Clinical Nutrition*, 2015.

Provided by University of Southampton

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