

# Researchers find stark social inequalities in children's body mass index

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Researchers at Trinity College have found that socio-economic inequalities in children's body mass index (BMI) emerge during the pre-school years and widen across childhood and into early adolescence. These are the striking findings of a study published in the international, peer-reviewed journal *Paediatric and Perinatal Epidemiology* today. The findings arise from Trinity's involvement with the [LIFEPATH project](#), an EU-funded consortium project investigating social differences in healthy ageing.

The researchers analysed data on height and weight (body mass index or BMI) from 41,399 children measured over time in three European countries – Ireland, the UK, and Portugal – using the mother's highest level of education as a marker of socio-economic position.

The research shows that whilst there were no differences in BMI between children grouped by their mothers education in infancy, differences in BMI emerged by pre-[school age](#) (3-5 years) with children from primary and secondary educated maternal backgrounds gaining body mass at a faster rate compared with children from tertiary educated maternal backgrounds.

These differences continued to widen as the children aged in all three countries. The authors used International Obesity Task Force (IOTF) cut-offs to determine how these differences in BMI translate into overweight and obesity. In general, they found that children from primary educated backgrounds were more likely to be overweight or obese at any age for

which IOTF cut-offs were available compared with children whose mothers' had a tertiary level education. This is a worrying trend as children who are obese in [early life](#) are more likely to maintain this status into adolescence and adulthood, increasing risk for chronic disease later in life.

## Key findings

- A study following 41,399 children through childhood and adolescence has shown stark socio-economic differentials in risk of overweight and obesity across three European countries: Ireland, the United Kingdom, and Portugal.
- The researchers used data from Growing Up in Ireland (Ireland), the Millennium Cohort Study (UK), and Generation XXI (Portugal) to follow children's Body Mass Index (BMI) trajectory from birth, across childhood, and into [early adolescence](#) using mother's highest level of educational attainment as a proxy for the socio-economic position of the household.
- Differences in overweight and obesity by maternal educational level, were established by pre-school age in Ireland, the UK and Portugal. Lower maternal education was associated with faster gains in child body weight but lower height growth leading to a higher risk of overweight and obesity.
- In Ireland, boys and girls whose mothers' had a primary-level education measured 0.90 kg / m<sup>2</sup> and 1.31 kg / m<sup>2</sup> heavier, on average, respectively at 13 years of age compared with children from tertiary-level (i.e. university) backgrounds.

Research Assistant Professor (Psychology) at Trinity College, Dr. Cathal McCrory, the lead author of the paper commented: "This study shows that children from disadvantaged socio-economic backgrounds gain body mass more quickly than their more advantaged peers, are more likely to be overweight or obese from pre-school age onwards, and are more

likely to become obese if previously non-overweight. They are quite literally carrying a heavier burden of disease from much earlier in life. These findings reinforce the necessity of challenging the childhood obesity epidemic at early ages as these patterns are difficult to change once they have become entrenched. Urgent government action is now required to understand the material, social, and structural barriers that contribute to these stark socio-economic differences in obesity risk."

Professor of Sociology at Trinity College, Richard Layte, the senior author of the study added: "This research shows that inequalities in health and life expectancy start early in life and are well established by age 5. Most [children](#) who are obese have a higher risk of being obese in adulthood with long-term health consequences. For example, other data from Growing Up in Ireland show that [obesity](#) at age 17/18 is already associated with raised blood pressure. This is a public health issue that needs urgent action."

**More information:** Cathal McCrory et al. Maternal educational inequalities in measured body mass index trajectories in three European countries, *Paediatric and Perinatal Epidemiology* (2019). [DOI: 10.1111/ppe.12552](#)

Provided by Trinity College Dublin

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