

No link between eating dinner after 8pm and obesity in children

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Researchers at King's College London have found no significant link between eating the evening meal after 8pm and excess weight in children, according to a paper published this month in the *British Journal*

of Nutrition.

Previous evidence suggested that the timing of food intake can have a significant impact on circadian rhythms (i.e. the body's internal daily clock) and therefore on metabolic processes within the body, potentially leading to an increased risk of being overweight or obese.

However, the evidence from studies in children is limited so King's researchers set out to establish whether the timing of children's evening meals was associated with obesity.

In the new study, researchers examined the eating habits of 1,620 children—768 children aged 4-10 years and 852 children aged 11-18 years—using data from the UK's National Diet and Nutrition Survey Rolling Programme collected between 2008 and 2012. This national survey gathered information annually from [food diaries](#) in which children or their parents recorded their dietary intake and meal timings over a 4-day period. The survey also collected measurements of weight and height which were used to calculate the BMI of the children.

Statistical analysis of the data showed no greater risk of being obese or overweight when eating dinner between 8pm and 10pm compared to eating between 2pm and 8pm for either of the age groups studied.

The lead author of the study, Dr Gerda Pot, is a Visiting Lecturer in the Diabetes and Nutritional Sciences Division and is also based at the Vrije Universiteit Amsterdam. She said: 'The findings of our study are surprising. We expected to find an association between eating later and being more likely to be overweight but actually found that this was not the case. This may be due to the limited number of children consuming their evening meal after 8pm in this cohort.'

The study also did not find any significant differences in the mean daily

energy intakes for those eating their dinner before 8pm compared with those who ate dinner later and only a small number of statistically significant variations in daily nutrient intakes.

The daily proportion of protein consumed was found to be higher in 4-10 year-old boys who ate later. For 11-18 year-old girls, there was a difference in the carbohydrate intake with those eating later consuming less carbohydrate as part of their daily intake. However, these differences do not allow for any broad conclusions to be drawn about the quality of diet.

Limitations of this study include potential under-reporting or misreporting of food intakes in the food diaries collected as part of the [national survey](#). The authors did not examine potentially confounding factors such as skipping breakfast, levels of physical activity or duration of sleep.

The new findings suggest there is currently insufficient evidence to support expanding dietary recommendations to include advice on when as well as what children [eat](#). However, childhood obesity is a major public health issue and current advice is to improve dietary quality and increase physical activity to reduce the risk of becoming overweight and help to reverse [excess weight](#) gain. More research is needed to investigate the influence of the timing of eating on childhood obesity.

Dr Pot further commented: 'Alongside changes in dietary quality and levels of [physical activity](#), meal timing is one of many possible factors that has been suggested as influencing the trends in weight gain seen in children in the UK. However, the significance of its role is under-researched. As this is one of the first studies investigating this link, it would be useful to repeat the analysis in other studies. We are currently also using data from this survey to look at another important aspect of children's food habits, the consumption of breakfast, to investigate the

impact of eating breakfast on [children's daily calorie intake](#) and overall dietary quality. And we are conducting analyses on the impact of sleep on obesity.'

More information: Janine D. Coulthard et al, The timing of the evening meal: how is this associated with weight status in UK children?, *British Journal of Nutrition* (2016). [DOI: 10.1017/S0007114516000635](https://doi.org/10.1017/S0007114516000635)

Provided by King's College London

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