



Research summary

Eggs for breakfast: Exploring satiety and energy intake control in children

About the study

Breakfast has long been touted as the most important meal of the day. Studies have shown that when kids eat breakfast, they have better appetite control, better diet quality, and better weight control. With childhood obesity on the rise, identifying foods that can help regulate appetite and promote satiety (feelings of fullness) can inform effective prevention and treatment tools.

Looking to identify these foods, several researchers noted a gap in existing scholarship: they noticed that few studies have examined the role of protein—and egg protein in particular—in appetite and energy intake regulation in children.

As such, this study sought to compare the effects of three different breakfasts—eggs, oatmeal and cereal—on children's energy intake at subsequent meals. Secondly, the study also tested the effects of the three different breakfasts on children's appetite control.

Methods

40 boys and girls between the ages of 8–10 years old participated in the study. Each child, along with their caregiver, visited the laboratory three times, with one week between visits. The children consumed a different breakfast each week: scrambled egg with whole wheat toast, diced peaches and milk; instant oatmeal with whole wheat toast, diced peaches and milk; or breakfast cereal with half of a strawberry pop tart and orange juice. All breakfasts had the same caloric value, with protein levels at 21%, 14% and 8% respectively.

The children stayed in the laboratory for the rest of the morning after breakfast, and were regularly asked to rate their perceived hunger, thirst, nausea and satiety. At the end of the morning, they were served lunch and the calories consumed were recorded by researchers. Following the lunch, the children left, and their caregivers recorded the rest of their food and beverage intake for the rest of the day. These data were sent back to the researchers, who analysed the findings.

Findings

The researchers discovered that there was a significant drop in calories consumed at lunchtime after the children ate the egg breakfast. Children consumed approximately 70 less calories at lunch following the egg breakfast, compared to both the oatmeal and the cereal breakfasts. For the rest of the day, however, energy intakes were about the same, regardless of the breakfast consumed.

The children rated their appetite conditions similarly across all factors—feelings of hunger, thirst, nausea and satiety—regardless of the breakfast consumed and despite the significant difference in lunch intakes.



Conclusions

As health care practitioners, parents, and caregivers develop strategies to address childhood obesity, serving a breakfast full of protein can moderate short-term energy intake in children, and thus play an important role in preventing and treating obesity in children. In particular, the results from this study can inform school meal requirements, nutrition standards, and play a role in helping children develop good dietary habits from a young age.

Moving forward, this study could be expanded to follow children more closely in a laboratory setting, to further understand the effects of a high-protein, egg-based breakfast on longer-term energy intake control. Building on this research will contribute to a growing body of scholarship that can help ensure our children grow up to be healthy, active adults.

About the researchers

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Citation

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