

Small changes in children's sleep lead to significant changes in eating habits, shows study

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Just an hour less sleep a night affects what and how children eat, University of Otago research shows.

The study, published in *The American Journal of Clinical Nutrition* and led by Ph.D. candidates Rosie Jackson and Silke Morrison, of the Department of Medicine, found children eat differently when they sleep less—even with as little as 40 minutes a night less—with substantial increases in energy intake and decreases in diet quality.

Jackson says a lot of time and effort is spent trying to improve [food intake](#) through dietary measures, but this study suggests that "maybe we could just look at sleep."

The study involved 100 Dunedin children aged between eight and 12. Their bedtime was brought forward by one hour for one week and pushed back an hour for another week (with one week between), and their sleep, [dietary intake](#) and desire to eat different foods was measured.

The children ate considerably more energy when they were sleep deprived, mostly after 5pm, with all of the extra energy coming from non-core and highly processed foods such as cakes, biscuits and chips.

Parents of the participants also reported that their child seemed to eat both more and less in response to their emotions when they were tired, and they also felt they parented slightly differently around food when their child had less sleep.

"It may be that during sleep restriction, children showed emotional undereating when offered less desirable, healthier foods—which are often lower in energy—yet exhibited emotional overeating when around highly palatable energy-dense foods, often consumed by people who are considered emotional overeaters."

The difference in [calorie intake](#)—the equivalent of about two to three biscuits a day—is clinically significant and could result in [excess weight](#)

over time if not counter balanced by increased [energy output](#), she says.

"Although this seems small at the individual level, if a child ate this in excess every day, it would be enough to explain several kilos of extra weight per year—and therefore enough to explain the link between not getting enough sleep and higher body weight. You only need a small difference in [energy intake](#) and expenditure each day to lead to weight gain over time."

Eating behaviors are thought to develop early in life and remain stable through childhood.

"However, our study suggests that sleep may be one factor that can influence eating behaviors in children," she says.

"It could be as simple as just having more time in the day to eat, but our data also show that food and emotions are tied together when thinking about sleep in [children](#). Getting a good night's [sleep](#) is important for so many aspects of our lives, including what and how we eat."

More information: Silke Morrison et al, The effect of modest changes in sleep on dietary intake and eating behavior in children: secondary outcomes of a randomized crossover trial, *The American Journal of Clinical Nutrition* (2023). [DOI: 10.1016/j.ajcnut.2022.10.007](https://doi.org/10.1016/j.ajcnut.2022.10.007)

Provided by University of Otago

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