

Sweet, bitter, fat: New study reveals impact of genetics on how kids snack

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Credit: University of Guelph

Whether your child asks for crackers, cookies or veggies to snack on could be linked to genetics, according to new findings from the Guelph Family Health Study at the University of Guelph.

Researcher Elie Chamoun investigated whether genetic variants in [taste receptors](#) related to sweet preference, fat taste sensitivity and aversion to bitter [green leafy vegetables](#) influence the snacks chosen by preschoolers. He found that nearly 80 per cent of preschoolers in the study carried at least one of these potential at-risk genotypes that could predispose them to poor snacking habits.

"Kids are eating a lot more snacks now than they used to, and we think looking at how genetics can be related to snacking behaviour is important to understanding increased obesity among kids," said Chamoun, a PhD candidate in the Department of Human Health and Nutritional Sciences and a member of the Guelph Family Health Study. "This new research could help parents understand how their kids taste, and tailor their diet for better nutritional choices."

Published in the journal *Nutrients*, the study looked at connections between the genes of the three at-risk taste receptors and linked them to snacking patterns among preschoolers.

The study entailed tracking the day-to-day diets of nearly 50 preschoolers and found that one-third of the kids' diets were made up of snacks. Chamoun also tested the participants' saliva to determine their genetic taste profile.

Chamoun discovered that kids with a sweet tooth, who have the gene related to sweet taste preference, ate snacks with significantly more calories from sugar. They also ate those snacks mostly in the evening.

"It's likely these kids snacked more in the evening because that's when they are at home and have more access to foods with high sugar," said Chamoun.

The children with the genetic variant related to fat taste sensitivity were found to consume snacks with higher energy density. People with this genetic variant may have low oral sensitivity to fat and therefore consume more fatty foods without sensing it, said Chamoun.

"Higher-energy density snacks, such as cookies with lots of sugar and fat, have a higher number of calories for their weight. Those are snacks you want to avoid."

The children with the genetic [variant](#) related to avoiding bitter vegetables also consumed snacks with high energy density.

"They might be replacing those healthy veggies with [unhealthy snacks](#). This is why they may be consuming more energy-dense snacks, because they are avoiding the healthy ones."

This study is the first in an emerging area of

nutrition research.

If researchers can establish a solid link between genetics and [taste](#), then we can create tests that will help parents determine which genetic variants their children have, said Chamoun.

"This could be a valuable tool for parents who might want to tailor their children's diet accordingly. For example, if you know your child has a higher desire for sweet foods based on their genetics, you might be more likely to limit or reduce their accessibility to those foods in the home."

More information: Elie Chamoun et al, Single Nucleotide Polymorphisms in Taste Receptor Genes Are Associated with Snacking Patterns of Preschool-Aged Children in the Guelph Family Health Study: A Pilot Study, *Nutrients* (2018). [DOI: 10.3390/nu10020153](#)

Provided by University of Guelph

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