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Does Good-Tasting Food Cause Weight Gain?

Monell study suggests palatable tastes do not drive long-term overeating

PHILADELPHIA (December 15, 2016) – Does eating good-tasting food make you gain weight? Despite the common perception that good-tasting food is unhealthy because it causes obesity, new research from the Monell Center using a mouse model suggests that desirable taste in and of itself does not lead to weight gain.

“Most people think that good-tasting food causes obesity, but that is not the case. Good taste determines what we choose to eat, but not how much we eat over the long-term,” said study senior author Michael Tordoff, PhD, a physiological psychologist at Monell.

Researchers who study obesity have long known that laboratory rodents fed a variety of tasty human foods, such as chocolate chip cookies, potato chips and sweetened condensed milk, avidly overeat the good-tasting foods and become obese.

These studies have provided support for the common belief that tasty food promotes overeating and ensuing weight gain. However, because no study had separated the positive sensory qualities of the appetizing foods from their high sugar and fat content, it was impossible to know if the taste was actually driving the overeating.

Accordingly, Tordoff and colleagues designed a series of experiments to assess the role of taste in driving overeating and weight gain. The findings are published online ahead of print in the journal *Physiology & Behavior*.

The researchers first established that laboratory mice strongly like food with added nonnutritive sweet or oily tastes. To do this they gave mice two cups of food. One group of mice had a choice between a cup of plain rodent chow and a cup of chow mixed with the noncaloric sweetener sucralose. The other group received a choice between a cup of plain rodent chow and a cup of chow mixed with mineral oil, which also has no calories.

The mice ignored the plain chow and ate almost all of their food from the cups containing the sweetened or oily chow, establishing that these non-caloric tastes were indeed very appealing.

Next, new groups of mice received one of the three diets for six weeks: one group was fed plain chow, one group was fed chow with added sucralose, and one group was fed



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chow with added mineral oil. At the end of this period, the groups fed the sweet or oily chow were no heavier or fatter than were the animals fed the plain chow.

Additional tests revealed that even after six weeks, the animals still highly preferred the taste-enhanced diets, demonstrating the persistent strong appeal of both sweet and oily tastes.

In another experiment, the researchers fed mice a high-fat diet that is known to make mice obese. Mice fed this high-fat diet sweetened with sucralose got no fatter than did those fed the plain version.

“Even though we gave mice delicious diets over a prolonged period, they did not gain excess weight. People say that ‘if a food is good-tasting it must be bad for you,’ but our findings suggest this is not the case. It should be possible to create foods that are both healthy and good-tasting,” said Tordoff.

Also contributing to the research, which was supported by Monell Center institutional funds, were Monell scientists Jordan Pearson, Hillary Ellis and Rachel Poole.

The Monell Chemical Senses Center is an independent nonprofit basic research institute based in Philadelphia, Pennsylvania. For over 48 years, Monell has advanced scientific understanding of the mechanisms and functions of taste and smell to benefit human health and well-being. Using an interdisciplinary approach, scientists collaborate in the programmatic areas of sensation and perception; neuroscience and molecular biology; environmental and occupational health; nutrition and appetite; health and well-being; development, aging and regeneration; and chemical ecology and communication. For more information about Monell, visit www.monell.org.