New form of long-used food ingredient for 'anti-hunger' yogurts, smoothies

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Promising results were reported here today from a proof-of-concept clinical trial of an "anti-hunger" ingredient for yogurt, fruit shakes, smoothies and other foods that would make people feel full longer and ease the craving to eat. Scientists described the ingredient, a new version of a food additive that has been in use for more than 50 years, at the 244th National Meeting & Exposition of the American Chemical Society.

The potential new tool in the battle of the bulge is methyl cellulose, a white powder that dissolves in cold water to form a thick solution that turns into a "gel" or gelatin-like material upon heating.

Methyl cellulose provides a pleasant texture and holds together the ingredients in hundreds of food products like baked goods, sweet and savory snacks and ready meals.

Carsten Huettermann, Ph.D., who presented the report, said that this is the first use of methyl cellulose as a satiety ingredient in food.

"This ingredient would make people feel full after eating smaller amounts of food," Huettermann explained. "With that sense of fullness and hunger-satisfaction, they would not crave more food. In our first study, we saw that fewer calories were consumed at the following meal after eating our new product. Our next step now is to investigate in further studies the mechanism of action and whether this may have an impact on weight management."

The updated methyl cellulose, named SATISFIT-LTG, showed promise for doing that in a controlled clinical trial that Huettermann discussed at the meeting. He is with Dow Wolff Cellulosics in Bomlitz, Germany, which manufactures methyl cellulose. Volunteers who consumed SATISFIT-LTG experienced a reduction in the sensation of hunger that lasted until the consumption of a following meal in which the volunteers could eat as much as they wanted (two hours after eating SATISFIT-LTG) and a statistically significant reduced intake of calories at this meal. The consumption of SATISFIT-LTG resulted in a 13 percent decrease in calorie intake.

Huettermann explained that conventional versions of methyl cellulose pass through the stomach rapidly and do not work as a satiety ingredient. SATISFIT-LTG, however, forms a gel at body temperature, and the gel lingers in the stomach before passing into the small intestine.

The scientists are developing SATISFIT-LTG as a potential ingredient in cold foods, such as smoothies and yogurts, and Huettermann said that work will continue based on the promising clinical trial results.

More information:

Abstract

Overweight and obesity are primarily driven by over-availability of food and an increasing sedentary lifestyle. It is believed, that reduction of casual snacking between meals and reduction in meal size due to decreased appetite will have a major impact on prevention and reduction of obesity. Materials that form a gel in the stomach or small intestine have been shown to enhance satiety. We report on the assessment of recently developed food grade methyl celluloses that thermally gel below body temperature and therefore can trigger satiety. In clinical trials with healthy human volunteers the concept was proven and a significant

reduction in energy intake was found. The methyl cellulose was successfully implemented in food formulations like yogurt, fruit shakes and smoothies.

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