

Consuming milk at breakfast lowers blood glucose throughout the day

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A change in breakfast routine may provide benefits for the management of type 2 diabetes, according to a new study published in the *Journal of Dairy Science*. H. Douglas Goff, Ph.D., and the team of scientists from

the Human Nutraceutical Research Unit at the University of Guelph, in collaboration with the University of Toronto, examined the effects of consuming high-protein milk at breakfast on blood glucose levels and satiety after breakfast and after a second meal. Milk consumed with breakfast cereal reduced postprandial blood glucose concentration compared with water, and high dairy protein concentration reduced postprandial blood glucose concentration compared with normal dairy protein concentration. The high-protein treatment also reduced appetite after the second meal compared with the low-protein equivalent.

"Metabolic diseases are on the rise globally, with type 2 diabetes and obesity as leading concerns in human health," Dr. Goff and team said. "Thus, there is impetus to develop dietary strategies for the risk reduction and management of obesity and diabetes to empower consumers to improve their personal health."

In this randomized, controlled, double-blinded study, the team examined the effects of increasing protein concentration and increasing the proportion of [whey protein](#) in [milk](#) consumed with a high-carbohydrate breakfast cereal on [blood glucose](#), feelings of satiety, and food consumption later in the day. Digestion of the whey and casein proteins naturally present in milk releases gastric hormones that slow digestion, increasing feelings of fullness. Digestion of whey proteins achieves this effect more quickly, whereas casein proteins provide a longer lasting effect.

Although the team only found a modest difference in food consumption at the lunch meal when increasing whey protein at breakfast, they did find that milk consumed with a high-carbohydrate breakfast reduced blood glucose even after lunch, and high-protein milk had a greater effect. Milk with an increased proportion of whey protein had a modest effect on pre-lunch blood glucose, achieving a greater decrease than that provided by regular milk.

According to Dr. Goff and colleagues, "This study confirms the importance of milk at breakfast time to aid in the slower digestion of carbohydrate and to help maintain lower blood sugar levels. Nutritionists have always stressed the importance of a healthy [breakfast](#), and this study should encourage consumers to include milk."

More information: B. Kung et al, Effect of milk protein intake and casein-to-whey ratio in breakfast meals on postprandial glucose, satiety ratings, and subsequent meal intake, *Journal of Dairy Science* (2018). [DOI: 10.3168/jds.2018-14419](https://doi.org/10.3168/jds.2018-14419)

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