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High amylose cornstarch improves blood glucose concentration, but does not affect satiety or food intake in healthy individuals

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Statement of the Problem: High fiber diets are known to promote satiety and sustain normal blood glucose through delayed digestion and gradual glucose absorption (1). The impact of high fiber diets on body weight regulation is thought to be due to their low energy density (2). Starches that resist digestion in the small intestine are known as resistant starches (RS) and contribute to the total fiber load. Because of the epidemic prevalence of overweight, and obesity worldwide (3-4), RS is considered to incorporate in commercial food products to curtail body weight gain. High-Amylose (5). Cornstarch (HAMS) is classified as a high fiber food due to its high RS content. However, the role of HAMS on energy intake is unclear. The aim of the present study was to explore if the consumption of RS will lead to higher satiety and lower food intake (FI) or will it promote more FI to compensate for the energy dilution of the RS. Methodology of the study included four test drinks administered to healthy volunteers as 75 g glucose (G) or amylose (A), 75 g 50:50 glucose-amylose (G-A) and artificially sweetened water control (C) after an overnight fast once a week. Pizza meal was served after blood glucose and appetite measurement were recorded at 0, 15, 30, 45, 60, 90 and 120 minutes by using a portable glucometer and visual analogue questionnaire.

Findings: both glycemic response and blood glucose area under the curve were lower in the order as $G > G-A > A=C$ ($p < 0.0001$). However, FI and satiety were unaffected by the test treatments ($p > 0.05$). No association was found between blood glucose and FI

Conclusion: HAMS improves blood glucose response but it's no effect on satiety and FI demands a careful interpretation of the dietary fibers specifically resistant starches on body weight management. The research was funded by the Research Office of Kuwait University, Grant # FF01/16.

Speaker Biography

Tasleem A. Zafar, Associate Professor, earned her Ph.D. degree in Foods and Nutrition at Purdue University, USA. She obtained a substantial research experience as Research Associate at Purdue, and University of Toronto, Canada. She has a vast experience of more than 30 years of teaching graduate and undergraduate students and guiding research. Her focal research interests concentrate on to explore a breakthrough for the epidemics of obesity and diabetes through functional food ingredients. She has published more than 20 original research articles in peer-reviewed journals and contributed chapters to four scholarly books published by Wiley-Blackwell Publishing Co., New York, USA and by IGI Global, USA. She has given invited talks, oral presentations and chaired several sessions at international conferences. She is an honorary editor of the Paki Journal of Home-Economics (PJHE) and has served as an honorary reviewer for many prestigious journals.

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