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Consumption of Parboiled Rice Enhances Insulin Sensitivity in Healthy Individuals More than those with Type-2 Diabetes

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Insulin resistance is a known risk factor for T2DM. Postprandial hyperglycemia is a biomarker of the physiologic handling of the plasma glucose concentration [1]. Reductions in postprandial hyperglycemia is desirable to prevent glycation of hemoglobin, which can lead to micro/macrovascular complications [2]. Parboiling is a process of soaking, steaming, drying and subsequent milling of paddy rice, which lowers the glycemic index and preserves nutrient content of the rice. In our previous study, PBR was found protective against excessive postprandial hyperglycemia both in people with health and T2D [3], however, the mechanism was not delineated. Thus, we aimed to explore if PBR lowers postprandial plasma glucose by enhancing insulin secretion, insulin sensitivity or through GLP-1 in the two study groups. GLP-1 is known to increase stimulation of insulin secretion [4-5]. The aim of this study was to explore if parboiled rice (PBR) will enhance insulin sensitivity compared to white rice (WR) in both healthy (H) people and those with type 2 Diabetes (T2D). Results show no difference in β -cell function (HOMA-B) between the two groups for either rice. Postprandial glucose decreased at time 60, 90 and 120 min in H while Area Under the Curve (AUC) over 120 min decreased in T2D after the PBR. Insulin secretion was lower and Insulin Sensitivity Index (ISI) higher after PBR in H, whereas GLP-1 AUC was non significantly higher in H after PBR. PBR can be a better alternative to maintain postprandial blood glucose level within normal range.

Biography

Dr. Zafar is a full professor at the Department of Food Science and Nutrition of the College of Life Sciences at Kuwait University at Kuwait. Her expertise includes evaluating the risk factors for excessive body weight, type-2 diabetes, and eating disorders among males, females, and children. Her research encompasses exploring dietary formulations that suppress appetite and help curtail overconsumption of calories and the prevention of obesity and type 2 diabetes through dietary management. Dr. Zafar is interested in developing food products to prevent hyperglycemia, insulin resistance, and weight gain. She has published more than 50 peer-reviewed research articles in renowned journals and ten book chapters.

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