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## Blood glucose pattern in type-2 diabetics and healthy individuals after consumption of parboiled rice

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**Statement of the Problem:** The type of starch in the carbohydrate ingested foods influences the postprandial blood glucose concentration (1-2). The alteration of the physicochemical nature of the starch granule can modify its effect on the postprandial glycemia (2). Rice, a highly consumed staple grain falls in the high glycemic index foods category (3-4). A relatively high incidence of diabetes is reported in rice-consuming countries (5). Not much information is available on its pre-absorptive physiological handling by the type-2 diabetic individuals. The aim of this study was to compare the blood glucose patterns in type-2 diabetic and healthy individuals after parboiled rice (PBR) to white (WR) or brown rice (BR).

**Methodology:** Both diabetic and healthy subjects (n=35) were fed the three cooked rice samples in a portion of 50g of available carbohydrates on three separate days with a washout period of one week. Blood sugar level were tested at 0, 15, 30, 45, 60, 90, and 120 min after completely ingesting the rice samples.

**Findings:** The post-prandial blood glucose response of PBR in healthy subjects was significantly lower both in the absorptive period such as at 15, 30, and 45 min as well as in the glucose disposal period of 60, 90 and 120 min compared

to WR or BR. The blood glucose concentration for the diabetic subjects was, however, significantly lower only in the glucose disposal period and not in the glucose absorptive period after the PBR (Figure1).

**Conclusion and significance:** Parboiled rice significantly reduced glycemic response in both study populations. Furthermore, differences were observed between the two groups in the pre-absorptive rice metabolism. Both white and brown rice produced similarly high blood glucose concentration among both groups of subjects at all time point of testing. Parboiled rice consumption is recommended a better alternative to WR or BR for diabetic people.

### 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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