Effect of different cooking methods on glycaemic index of Indian and Pakistani basmati rice varieties

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Abstract

Introduction Glycaemic index (GI) reflects the blood glucose response after ingestion of a 50g digestible carbohydrate portion. Many factors affect the GI, including degree of starch gelatinization.

Methods The objective was to determine the GI and the effect of different cooking methods on GI of a Pakistani basmati rice (PBR) and an Indian basmati rice (IBR) frequently purchased by Sri Lankans. This was a crossover study. Participants were ten healthy individuals aged 20-30 years whose BMI range was 18.5-23.5 kgm². Proximate composition, [carbohydrate, protein, fat, soluble dietary fibre (SDF), insoluble dietary fibre (IDF) and ash], amylose content and GI of the two rice varieties were determined by using standard methods. Rice was cooked separately in a rice cooker and a microwave by adding 1 cup of rice (110 g) and 1 cup of water (150 ml)). Glucose was used as the standard. GI values were expressed as the average value of 10 participants.

Results Fat, total dietary fibre (TDF), SDF and IDF contents were significantly (p<0.05) higher in IBR when compared to PBR. The GI values of IBR and PBR cooked in a rice cooker (GI=54 SD=8; GI=64 SD=12) or microwave (GI=43 SD=28; GI=56 SD=12) belonged to low and medium GI categories respectively. A percentage reduction in GI values was seen in PBR (12.5%) and IBR (20.4%) when cooked in a microwave oven compared to a rice cooker.

Conclusions Irrespective of the method of cooking PBR had medium GI and IBR had low GI.

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