

Postprandial plasma glucose responses and glycaemic indices of different forms of a large sago meal

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The aim of the study was to determine the postprandial plasma glucose responses and glycaemic indices of three different physical forms of a sago meal. Twelve healthy subjects consumed in random order, three white bread meals and three sago meals (sago porridge, sago paste and sago gel) on separate days at least 1 week apart after an overnight fast. Venous blood samples were drawn before and 15, 30, 45, 60, 90 and 120 min after the consumption of the bread or sago meals. A 2-way (Meal x Time) repeated measures ANOVA was used to determine the differences in plasma glucose between meals over time. A one-way repeated measures ANOVA was employed to determine the differences in the areas under the curve of plasma glucose responses between the sago meals. Plasma glucose following the ingestion of the sago porridge (5.71 ± 0.55 mmol/L) was significantly lower than for the sago paste (6.23 ± 0.75 mmol/L, $p=0.026$) and sago gel (6.59 ± 0.89 mmol/L, $p < 0.001$). Collapsed over meals, plasma glucose at 15min (5.84 ± 1.05 mmol/L) was significantly lower than at 30min (7.71 ± 1.32 mmol/L, $p < 0.001$), 45min (7.91 ± 0.99 mmol/L, $p < 0.001$) and 60min (7.02 ± 1.19 mmol/L, $p=0.008$). The area under the glucose-response curve of sago porridge (209 ± 66 mmol/L·min) was significantly larger than that of white bread (126 ± 36 mmol/L·120min, $p=0.028$), as was that of sago paste (225 ± 85 mmol/L·120min, $p=0.007$) and sago gel (281 ± 119 mmol/L·120min, $p < 0.001$). However there was no significant difference between the areas under the glucose-response curve between the three sago meals. Glycemic index values were determined as 100, 166, 179, 223 for white bread, sago porridge, sago paste and sago gel, respectively. It is concluded that ingestion of the sago porridge elicited lower plasma glucose responses compared to sago paste and sago gel.