

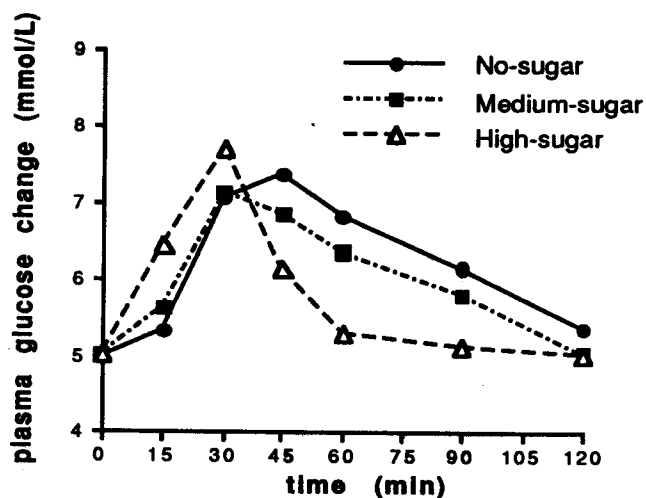
ADDITION OF SUGAR TO BREAKFAST CEREAL LOWERS GLYCAEMIC-INSULIN RESPONSE

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It is widely assumed that addition of refined sugar to meals increases the glycaemic-insulin response compared to the low sugar counterpart. However, many starchy foods have a high glycaemic index (GI > 70), while that of sucrose is only 60 (glucose = 100). We hypothesised that addition of sucrose to a high GI food would theoretically *lower* the overall glycaemic and insulin response to a meal.

Twelve healthy volunteers consumed three meals containing 0, 21 and 43 g of sucrose added to varying amounts of Kellogg's Rice Bubbles™ such that the total carbohydrate (50g) and energy remained constant. Each type of meal was consumed three times (i.e. nine meals in total) in random order approximately one week apart. Capillary blood was taken at 0, 15, 30, 45, 60, 90 and 120 minutes after the meal and plasma analysed for glucose and insulin.

An inverse correlation was found between glycaemic response (incremental area under the curve, AUC) and the amount of sucrose in the meal ($r = -0.39$, $P < 0.01$). i.e. higher amounts of sucrose were associated with a lower glycaemic response (see figure). Similarly, the meals containing sucrose gave lower insulin responses ($P < 0.05$) than the no sugar meal, but there was no significant difference between the meals containing 21 and 43 g of sucrose.



Glycaemic response to breakfast meals

These results challenge the assumption that added sucrose necessarily increases glycaemic and insulin responses. Many low fat, starchy products such as breakfast cereals have a high GI. The inclusion of sugar so that it replaces some of the starch (eg Kellogg's Coco Pops™) may actually reduce the GI of the overall meal.