

COMPARISON OF LOW AND HIGH GLYCAEMIC INDEX DIETS IN THE
MANAGEMENT OF DIABETES

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The 'glycaemic index' of foods has been introduced as a method of comparing relative glycaemia after different foods. Long term consumption of foods with a low glycaemic index (e.g. legumes, pasta) may improve carbohydrate and lipid metabolism in comparison with foods having a high glycaemic index (e.g. bread, potatoes) in both normal and diabetic individuals (Jenkins et al. 1988).

Six individuals with non-insulin dependent diabetes have completed an ongoing study comparing the effects of high and low glycaemic index diets on diabetes control. The study was performed as a randomised cross-over design with 12 weeks on each diet. Compliance was assessed by a four-day weighed food record in the last week of each dietary period, and by a modified dietary frequency questionnaire administered weekly by a dietitian who visited the subjects in their homes. Metabolic studies were made at the start of the study and at the completion of each dietary period. The calculated glycaemic index of the low glycaemic index diet was 41% and of the high glycaemic index diet was 70%. Both diets were designed to contain approximately the same amount of energy, fat (35-40% energy), carbohydrate (40-45%), protein (20%) and fibre (20 g).

At the completion of the low glycaemic index period (in comparison with the high), there was a 22% improvement in glucose tolerance as assessed by responses to standard meals given over 8 hr. Area under the incremental blood glucose curve (with fasting as the baseline (mean \pm se)) was 850 ± 196 mmol.min/l after the high glycaemic index dietary period compared with 660 ± 222 mmol.min/l after the low glycaemic index period ($P < 0.05$).

There was clinically a significant reduction in glycosylated haemoglobin from $7.5 \pm 0.6\%$ at the end of the high diet to $6.6 \pm 0.5\%$ at the end of the low diet ($P < 0.05$). No subject lost or gained weight during either dietary period.

These preliminary results suggest that low glycaemic index diets have a favourable effect on diabetes control.

JENKINS D.J.A., WOLEVER T.M.S. and JENKINS A.L. (1988).
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