THE DEVELOPMENT OF LOW GLYCAEMIC INDEX BREADS

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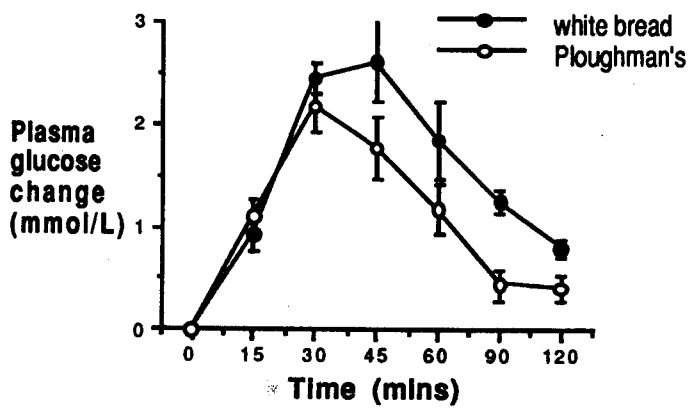
Low glycaemic index (GI) foods have been associated with better glycaemic control in individuals with diabetes (1). However, the number of low GI foods is limited and many of them, such as legumes and 'whole' grain cereals, are unacceptable to western palates. Most individuals do not want to reduce their consumption of staple foods, such as bread, which have a high GI. The aim of study, therefore, was to manipulate the ingredients in bread to lower its glycaemic index (GI) without compromising palatability or commercial acceptability.

Eight healthy, normal volunteers were fed test meals containing 50g carbohydrate portions of four modified breads (barley bread, multigrain bread, oat bran bread and a commercial bread, Fielders' Ploughman's™ wholemeal loaf). Three of the modified breads were produced at the Bread Research Institute by addition of kibbled grains or oat bran in the ratio 50:50 (w/w) with white breadmaking flour. The glycaemic response, satiety and palatability of each of the breads was measured using standardised methodology.

GI of the test breads, calculated as the incremental area under the blood glucose response curve using white bread (= 100) as reference was 67 ± 4 for Ploughman's loaf (see figure), 69 ± 7 for barley bread, 61 ± 7 for multigrain bread and 63 ± 10 for oat bran bread. All were significantly different to white bread ($P < 0.01$). Ploughman's loaf was rated as more palatable then white bread ($P < 0.05$) but no other differences in palatability were observed.



Glycaemic responese to breads

The findings indicate that it is possible to produce acceptable breads with a low GI by the addition of 'whole' grains and/or viscous fibre up to a level of 50%. Such products have applications in diabetes, satiety and exercise performance. It is time to consider whether the GI of a product ought to be included on food labels.

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