

# **Glycemic Index Research Report #2140**

**For Hermanbrot Pty Ltd.**

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**Sydney University's**

**Glycemic Index Research Service (SUGiRS)**

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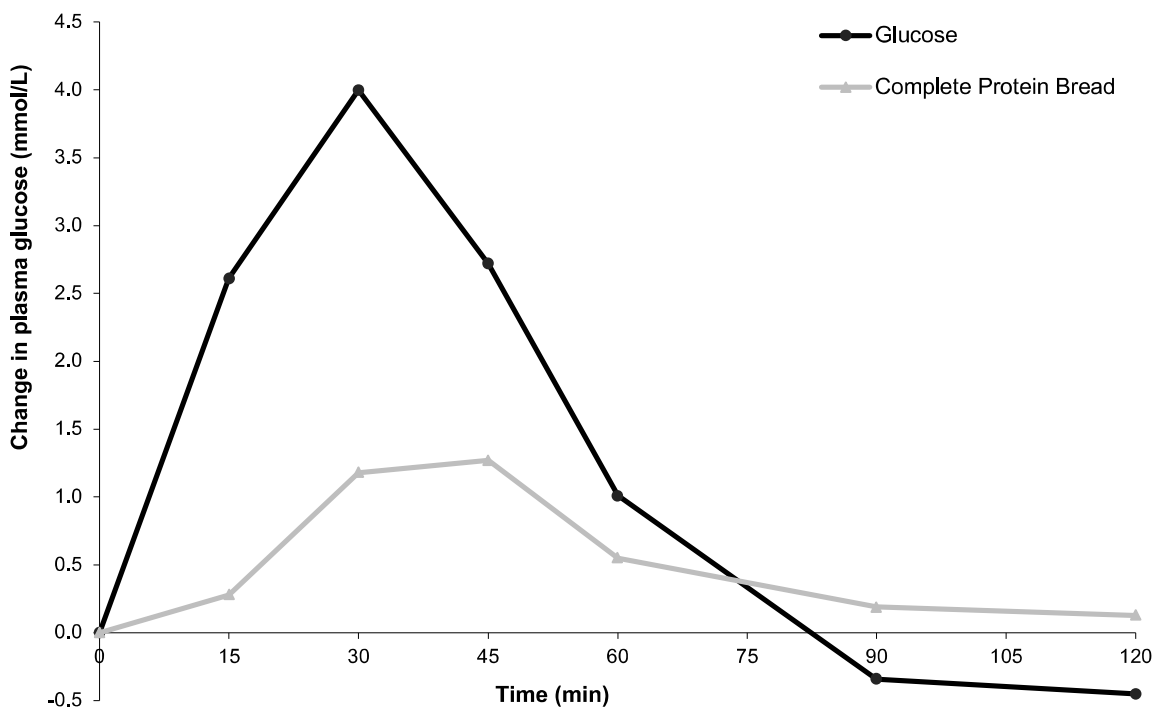
## Results

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### The average glycemic response curves for the reference food and the test bread

The average 2-hour plasma glucose response curves for the 25-gram available carbohydrate portions of the reference food and the Hermanbrot Complete Protein Bread are shown in Figure 2 below. The reference food (glucose solution) produced a rapid initial rise in plasma glucose to a high peak glucose concentration at 30 minutes and the greater overall glycemic response. The Complete Protein Bread produced a low plateau-shaped peak plasma glucose response between 30 – 45 minutes, followed by a steady decline in glycemia between 45 – 120 minutes. The plasma glucose response curve produced by the test bread remained above the baseline concentration throughout the second hour of the experimental period.

**Figure 2.** The average plasma glucose response curves for the equal available carbohydrate portions of the reference food and the test product, shown as the change in plasma glucose from the fasting baseline level.



## Conclusions

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Using glucose as the reference food (GI = 100), foods with a GI value less than 55 are currently considered to be low-GI foods (12, 13). Foods with a GI value between 56-69 are medium- or moderate-GI foods, and foods with a GI value of 70 or more are high-GI foods. The Hermanbrot Complete Protein Bread tested in this study produced an average GI value of 39, which places this product well within the low GI category. Although a low GI value is a desirable nutritional characteristic, other nutritional factors such as the energy density and the fat content must also be taken into consideration when comparing the health properties of different foods. The GI value observed for the high protein bread is only valid as long as the formulation (ingredients and processing methods) remain the same. Any changes made to the product are likely to influence the GI value, and therefore any modified formulation may need to be retested.

GI values are measured using portions of foods and drinks that contain between either 25 or 50 grams of digestible carbohydrate, but these may not be similar to the amounts of these products typically consumed by people in normal environments. It is possible to calculate a glycemic load (GL) value for any sized portion of a carbohydrate-containing food, as long as you know its GI value. The GL value for a food or drink is calculated by multiplying the amount of available carbohydrate in the portion of the food or drink by its GI value and then dividing by 100.

Similar to GI values, GL values are useful for helping people identify which types and amounts of foods will produce relatively lower blood glucose responses after consumption. A standard serve (ie. 80 grams/approximate weight of 2 slices of bread) of the Complete Protein Bread tested in this study contains a total of 5.6 grams of digestible carbohydrate. Therefore, the GL of an average serve of the bread is  $(5.6 \times 39)/100 = 2$ . Currently, the consensus is that GL values of 10 or less are low GL; GL values between 11 – 19 are medium GL values; and GL values of 20 or more are high GL values (12).

# Sydney University's Glycemic Index Research Service

**SUGiRS**

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The GI values of foods must be tested scientifically. At this stage, only a few research groups around the world currently provide a legitimate testing service. The University of Sydney has been at the forefront of glycemic index research for over a decade and has determined GI values for more than 3500 foods. In 1999, the Human Nutrition Unit established a commercial GI testing unit called 'Sydney University's Glycemic Index Research Service' (SUGiRS) to meet the increasing demand for GI research by local and international food manufacturers and pharmaceutical companies.

Fiona Atkinson and Professor Jennie Brand-Miller are co-authors of *The International Tables of Glycemic Index* published by the scientific journal, *The American Journal of Clinical Nutrition*, in 2021. Previous editions of the International Tables (published in 1995, 2002 and 2008) have proven to be an important reference for health professionals when planning therapeutic diets for people with diabetes. Dr Brand-Miller's books, *The GI Factor* and related pocket books on diabetes, heart disease and weight reduction, are aimed at lay people and health professionals, and have sold more than 150,000 copies in Australia since 1996. A British edition of *The GI Factor* was released in 1997 and a North American edition (*The Glucose Revolution*) was released in July 1999. Each edition of the book includes tables listing the GI values of more than 350 different foods, many of which were tested at the University of Sydney. The glycemic index has been discussed in a number of best-selling books and in magazine articles in relation to a range of health topics such as diabetes, breast cancer and weight control. Publications such as these and ongoing research promoting the healthy nature of low-GI foods have generated an increasing demand for GI research.