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Glycemic Index (GI) Score for USANA's TenX Antioxidant Blast Dietary Supplement

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Background

The glycemic index (GI) was developed to rank different foods according to the extent to which they increase blood glucose following ingestion (1). Foods that are assigned a higher GI score generally contain higher levels of rapidly digested carbohydrates and produce a larger rise and fall in blood glucose. Foods with a lower GI score generally contain lower levels of carbohydrates and / or carbohydrates that are digested more slowly and produce a more gradual and a relatively lower rise in blood glucose. GI scores are now being used in scientific research to examine the role of glycemic stress in defining the risk of certain diseases. A growing body of research has shown that long-term consumption of high glycemic diets, increases the risk of developing diabetes, heart disease and colon cancer (2, 3). GI scores are also useful in designing weight and eating management programs (2, 4, 5, 6).

The objective of this study was to evaluate the GI score for USANA's TenX Antioxidant Blast dietary supplement.

Methods

This study was conducted using an internationally recognized methodology for measuring Glycemic Index (9). Eleven healthy subjects were recruited. Each completed four test sessions— two involving the reference food (glucose solution) and two involving USANA's TenX bar. At each session, subjects reported to USANA's research center in the morning after completing a 10–12-hr overnight fast. Subjects completed a baseline fasting blood glucose, measured on the One Touch Ultra® Blood Glucose Meter (Johnson and Johnson), using capillary blood obtained from a finger puncture. Subjects then consumed a fixed amount of the TenX Antioxidant Blast or the reference food. In each case, the TenX and reference food supplied 25 g of available (digestible) carbohydrate (while total carbohydrate varied). Nutritional characteristics of each are given in Table 1. Subjects were then required to remain seated and refrain from additional eating and drinking for the next two hours. Additional blood glucose measurements were obtained 15, 30, 45, 60, 90 and 120 minutes after the test meal. Results were used to plot 2-hr blood glucose response curves, and the Area Under the Curve (AUC) for each plot was calculated. (AUC's indicate the magnitude of the total blood glucose response.) The GI score for the TenX was calculated by dividing the appropriate 2-hr blood glucose AUC value by the subject's average 2-hr blood glucose AUC value for the reference food (glucose solution) and multiplying by 100 to obtain a percentage score.

Table 1. Nutritional Characteristics

Food	Energy (Kj)	Protein (g)	Fat (g)	Total Carb (g)
Glucose Reference	400	0.0	0.0	25
TenXBlast Antioxidant	519	0.0	0.4	28.5

Results

Figure 1 shows the average two-hour blood glucose response curves for the eleven subjects following consumption of the TenX bar and the reference food. The TenX bar produced lower blood glucose levels than did the glucose reference meal. AUC analysis based on the

glucose response curves (Figure 2) yielded a Glycemic Index score of 31 for TenX Antioxidant Blast (relative to the standard GI score of 100 for the glucose solution).

Discussion

The Glycemic Index scale (0-100%) is continuous. Nevertheless, a food is considered high glycemic if its GI score is greater than 70, moderately glycemic if its GI score is between 55 and 70, and low glycemic if its GI score is less than 55 (7). Results from the study reported here show that TenX, with a GI score of 31, is a very low glycemic.

Acknowledgment: This study was conducted at USANA Health Sciences, Inc. using normal, healthy volunteers, all of whom were employees of the company.

References

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Figure 1.
Two-hour blood glucose response curves for the test food (USANA TenX Blast) and the reference food (glucose solution). Values are the average for 11 subjects.

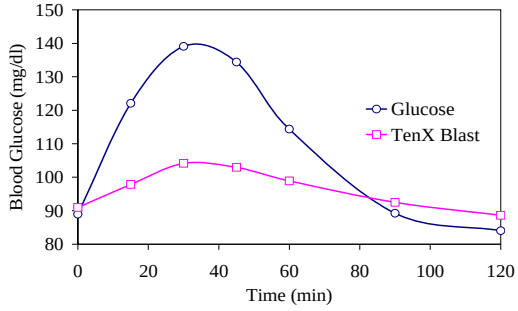

Figure 2.
Average GI scores for the USANA TenX Blast versus the glucose reference food.