

Glycemic Index Score of the USANA Oatmeal Raisin Nutrition Bar

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Glycemic index (GI) was developed to rank different foods according to the extent to which they increase blood glucose following ingestion.¹ Foods with high GI scores contain rapidly digested carbohydrates and produce large rises and falls in blood glucose. Foods with low GI scores contain slowly digested carbohydrates and produce gradual and relatively low rises in blood glucose.

GI scores are currently used in scientific research to examine the role of glycemic impact in defining risk of certain diseases. For example, a growing body of research has shown that long-term consumption of a high-glycemic-impact diet 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 determine a GI score for USANA's Oatmeal Raisin Nutrition Bar.

Methods

This study was conducted using internationally recognized GI methodology.⁹

Ten healthy subjects were recruited, and each completed three test sessions: two involving the reference food (glucose solution), and one involving the test food (USANA Oatmeal Raisin Nutrition Bar). At each session, subjects reported to USANA's research center in the morning in a fasting state (10–12 hours overnight). Fasting blood glucose was measured using a *One Touch Ultra® Blood Glucose Meter* (Johnson and Johnson) on blood

obtained from a finger puncture. Subjects then consumed a fixed amount of test or reference food. In each case, the test and reference foods supplied 50 grams of available (digestible) carbohydrate. Specific nutritional characteristics for the servings of reference and test food are given in Table 1.

After consumption of the test or reference food, subjects were required to remain seated and refrain from additional eating and drinking for the next two hours. Additional blood samples were

Table 1

Characteristics of the Test Foods

	Energy (kJ)	Protein (g)	Fat (g)	Carb. (g)
Glucose Reference	800	0.0	0.0	50.0
Oatmeal Raisin Nutrition Bar	1400	17.6	5.3	56.4

taken at 15, 30, 45, 60, 90, and 120 minutes after the initial meal.

Results were used to plot two-hour blood glucose response curves, and the area under the curve (AUC) for each plot was calculated. (AUCs indicate the magnitude of total blood glucose response.) A GI score for the test food was calculated by dividing two-hour blood glucose AUC values by the subjects' average two-hour blood glucose AUC value for the reference food (glucose solution), then multiplying by 100 to obtain a percentage score.

Results

Figure 1 plots time course data for average two-hour blood glucose response curves following consumption of the reference and test food. AUC analysis based on the above response curves yielded a Glycemic Index score of 34 for the Oatmeal Raisin Nutrition Bar.

Discussion

The Glycemic Index scale is continuous from 0–100%. In gen-

eral, a food is considered high-glycemic if its GI score is greater than 70, moderately glycemic if its GI score is between 56 and 69, and low-glycemic if its GI score is less than 55.⁷ Results from this study show that USANA's Oatmeal Raisin Nutrition Bar, with a GI score of 34, is a low-glycemic food.

The low Glycemic Index score for this nutrition bar is the result of several key formulation decisions. First, the bar provides a balanced macronutrient formula (carbohydrates, protein, and fat). Protein and fat reduce the Glycemic Index of a food. Second, the major sources of digestible carbohydrate in the bar are low-glycemic. Third, the Oatmeal Raisin Nutrition Bar provides a good amount of dietary fiber (3 grams per serving), and fiber is known to lower the Glycemic Index of a food, likely by slowing the absorption of sugars in the gut.⁸ Given these characteristics, it is not surprising that the USANA Oatmeal Raisin Nutrition Bar was found to be low-glycemic.

Replacing high-GI snacks with USANA's Oatmeal Raisin Nutrition Bar can help individuals improve glycemic characteristics of their diets. Furthermore, regular use of low-glycemic products like the USANA Oatmeal Raisin Bar, as part of a healthy, balanced diet should help to reduce certain negative health consequences associated with high-GI diets.

Acknowledgments

This study was conducted at USANA Health Sciences, Inc. Participants were normally healthy volunteers. All were employees of USANA.

References

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Figure 1
Two-hour blood glucose response curves for USANA's Oatmeal Raisin Bar and a glucose reference meal. Values are averages for ten (10) subjects.

