



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Gina R. Gwiazda	Project Number J1716
Project Title The Ideal Meal: A Study of the Glucose Response to Protein and Energy Bars	
Abstract Objectives/Goals My goal in this project was to look at the blood glucose response to eating cereal bars and bread with different protein:carbohydrate ratios, with and without the consumption of protein 30 minutes beforehand. Methods/Materials The blood glucose of two subjects was measured two hours after consuming white bread and cereal bars with different protein:carbohydrate ratios in separate trials. The experiment was repeated with consumption of protein thirty minutes before eating the bars. Results There is an inverse relation between peak blood glucose and protein:carbohydrate ratio of the cereal bar without any pre-protein consumption in both subjects. The blood glucose response to eating white bread fall in the same trend observed for the cereal bars, although there is a lot of variability in the blood glucose response. The younger subject peak glucose is observed at either earlier or at the same time as in the older subject and generally returns to the initial or close to the initial blood glucose value earlier than in the older subject. In the oldest subject consumption of protein before the cereal bar moderated the peak blood glucose response. For the younger subject, the results were inconclusive. The difference in results between subjects could be based on factors that were not controlled in this study such as the subjects age, weight, history of diabetes in their family, daily amount of exercise, etc. Conclusions/Discussion My conclusion is that eating a high protein, low carbohydrate cereal bar moderates the increase in blood glucose, and protein consumption beforehand appears to reduce the increase even farther.	
Summary Statement I looked at the blood glucose response to eating cereal bars and bread with different protein:carbohydrate ratios, with and without the consumption of protein 30 minutes beforehand.	
Help Received My mom participated in my study and my father helped me create my graphs on excel.	