



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Cullen G. Darius</b>	<b>Project Number</b> <b>J0504</b>
<b>Project Title</b> <b>Making Healthy Choices: The Impact of Different Foods on Blood Glucose Based on the Glycemic Index</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective was to determine if foods of different glycemic values differentially affect the blood glucose levels of non-diabetic participants. I predict there will be a difference in blood glucose 30 minutes after eating different glycemic foods. Specifically, high glycemic foods such as juice will lead to higher blood glucose than low glycemic foods such as ham.</p> <p><b>Methods/Materials</b> Materials included foods of different glycemic values, blood glucose meters, food scales, participant directions, and data recording sheets. A repeated subjects design with 5 participants was used to allow for the comparison of means for each food, while controlling for individual differences in blood glucose. There are 4 levels of the independent variable, foods with different glycemic indexes (ham, apples, juice, and a snicker#s bar -8 oz. of each). The dependent variable is change in blood sugar. Because mixing food affects the glycemic index, participants tested food in the morning before eating anything else. Each food was tested on a different morning. They tested their blood glucose when they woke up, before eating the food, and 30 minutes after eating the food. The dependent variable was the number of points blood sugar changed. Participants tested their blood sugar using a glucose meter. No blood product was collected or handled by the researcher for this project.</p> <p><b>Results</b> The data did support my hypothesis. The average rise in blood sugar for ham was 1.6 points, apple was 9.4 points, juice was 20.8 points, and snickers was 12.6 points. A comparison of the means across participants suggests meaningful differences by food, these differences are consistent when comparing values within participants. While the snickers bar had more carbohydrates than the juice, the juice had the biggest impact because it is made of fast burning sugar (high glycemic).</p> <p><b>Conclusions/Discussion</b> Findings demonstrate that the higher the glycemic index of the food, the more of an effect it will have on blood sugar. This is important because changes in blood sugar have been related to health problems. In this study the participants did not have diabetes, but there was still an impact on blood sugar. Making healthy food choices includes considerations such as fat and calories. However, this study adds the additional consideration of the glycemic index to help maintain healthy blood glucose levels.</p>	
<b>Summary Statement</b> Foods of different glycemic values differentially affect the blood glucose levels of non-diabetic participants.	
<b>Help Received</b> Mother helped type report and bought supplies.	