



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Lauren A. O'Connell	Project Number J0416
Project Title The Fruit Loop: Carbohydrates, Glucose, and the Glycemic Index	
Abstract Objectives/Goals Objective is to determine which fruit yields the highest amount of glucose in the saliva immediately after chewing. My hypothesis is that the fruits with the highest amount of carbohydrates per serving will yield the highest amount of glucose. This project was designed to investigate which fruits might be the best choice for a diabetic seeking to maintain stable glucose levels. Methods/Materials I chose fruits with varying degrees of carbohydrates. I cleansed my mouth and tested my saliva to determine a negative result and then chewed a 1/2 T serving of fruit. I placed a Diastix strip in my mouth and waited 5 secs. The test strip was then compared to the color-coded levels to determine the amount of glucose in my saliva. Results were recorded and graphed. Results Bananas and pears, which were highest in carbohydrates, did not yield the highest glucose levels. Pears were among the lowest producers of glucose. Blackberries, with a much lower level of carbohydrates, produced a result at the highest end of the scale. Avocados continuously yielded a negative result. No glucose was being produced in the saliva during my test of avocados. After obtaining such puzzling results, I researched carbohydrates and glucose levels in relation to these fruits and discovered information regarding the Glycemic Index: how quickly a food converts to glucose. Since carbohydrate levels were not directly correlating to my results as I had originally hypothesized, I graphed my results in order of Glycemic Index ratings and found a direct correlation: a high glycemic index resulted in high levels of glucose in the saliva. Conclusions/Discussion In addition to the amount of carbohydrates per serving, the glycemic index score of a food plays a large part in determining the amount of glucose that was produced in my saliva due to the speed at which the carbs converted to glucose. This translates into how quickly or slowly a food will convert to glucose in the bloodstream. The glycemic index rating, not only the amount of carbohydrates in a food, should be taken into consideration when determining the type of food to consume in order to maintain a stable blood glucose level. Knowing how slowly or quickly a meal will convert to glucose allows diabetics to more effectively manage the timing of their insulin injections as well as the amount of insulin they must inject.	
Summary Statement This project will measure the amount of glucose in saliva immediately after chewing in order to determine what might be the "safest" fruit for a diabetic, or person managing their blood glucose levels, to consume.	
Help Received Mother helped with purchase of supplies and creating graphs.	