



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Chisato (Chisa) U. Hughes	Project Number J0318
Project Title Perception Deception? Does Low Blood Sugar Affect a Diabetic's Perception of Sweetness?	
Abstract Objectives/Goals The purpose of my project was to find out if Type I insulin dependent diabetics would perceive sweetness less accurately when they are "low" blood sugar (under 80 mg/dl) than when they are "good" blood sugar (100-150 mg/dl). Methods/Materials To test the subject's perception of sweetness, I had the subject rate the amount of sugar in a series of containers from least sweet to sweetest. Their level of accuracy was determined by how many of the six containers the subject had in the correct order. Subjects had a small bite of cracker in between samples to clear their taste buds. Non-diabetics were used as a control group. Results By using the three measures of central tendency (mean, median, and mode) to evaluate the diabetics# and non-diabetics# test scores, a verdict could be established. The diabetics# "good" blood sugar scores (an average of 5.125 correctly ordered out of 6) were, on the whole, more accurate in determining sweetness than the diabetics# "low" blood sugar scores (an average of 4.25 correctly ordered out of 6). Mean scores indicated that the diabetic subjects tended to be more accurate in determining sweetness than the non-diabetic subjects (an average of 4.125 correct). Conclusions/Discussion The results suggested that when a diabetic is low blood sugar, their perception of sweetness is less accurate. These results tended to support my hypothesis that diabetics with low blood sugar may experience some confusion and blurring of the senses. However, diabetics# average scores, both when they were "low" blood sugar and when they were "good" blood sugar, were more accurate than the non-diabetics#. This leads me to think that since non-diabetics tend to have more sugar in their diet than diabetics, they become desensitized to the sugar.	
Summary Statement My project indicated that diabetics' perceive sweetness less accurately when they are low blood sugar.	
Help Received Dr. Ted Humphry, M.D., helped me find diabetic subjects to test, my mother helped deliver testing kits to diabetic participants, helped me with the graphic design of the title, and also helped me get supplies for my project. My father helped edit my conclusion as well as my results.	