



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Francisca M. Perez	Project Number J2125
Project Title Sugar Substitutes and Tooth Decay	
Abstract Objectives/Goals Americans are using sugar substitutes more and more for health issues, dieting and preventing tooth decay. When people use these so called healthy sweeteners, could they have negative effects? The purpose of this experiment was to find out if the sweetener in different sugar substitutes affect the progression of tooth decay. My hypothesis stated that the sweetener in different sugar substitutes would affect the progression of tooth decay. This is because sugar substitutes are made from very different ingredients. Methods/Materials My materials included: 6 human teeth, 250 ml glass jars with lids, 200ml purified water per jar, 25g of sucrose, 25g of sucralose, 25g of saccharin, 25 g of aspartame, 25g of stevia, a 100 ml graduated cylinder, a 350 ml plastic measuring cup, an electronic balance, latex gloves, plastic tweezers and pins. I obtained approximately 30 teeth from local oral surgeons. I inspected each tooth and selected 6 teeth with no signs of tooth decay. I placed four of the teeth in different solutions made with water and sugar substitutes. I placed one tooth in a sugar solution and one in water. I soaked all six teeth for 12 days, removing the teeth every three days to check for signs of tooth decay. I checked the weight, volume, hardness and appearance of the teeth. Results Some of the teeth began to show signs of tooth decay after only three days. Signs of tooth decay included soft spots, discoloring, peeling of the enamel and changes in the weight of the teeth. Conclusions/Discussion My hypothesis was proven valid. The results of this experiment showed that each sweetener affected the teeth differently. I believe this experiment is very relevant to society because many people use artificial sweeteners as an alternative for sugar. The results prove that although these sweeteners may be a better choice than sugar, they still may pose a health concern.	
Summary Statement The central focus of this project is to find out if the sweeteners in different sugar substitutes affect the progression of tooth decay.	
Help Received Dentist recommended oral surgeons to approach for teeth; 3 oral surgeons donated teeth; parents helped purchase supplies; used Aptos Junior science lab and equipment	