



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) David R. Soloway	Project Number J1435
Project Title You're Happy; Are Your Teeth? The Truth About Sodas and Tooth Decay	
Abstract Objectives/Goals Even though our teeth are extremely strong, they can be harmed. The acids in many drinks, such as sodas, can dissolve teeth, cause tooth decay and drastically change the color of teeth. Or can they? The reason for doing this project is to disprove the old wife's tale that if you leave a tooth in a glass of soda overnight, the tooth will dissolve by morning. Methods/Materials I put three groups of four teeth each in 12 separate cups and filled each cup with Coke, Pepsi, milk or orange juice. The teeth were immersed for seven days and were weighed once every 24 hours using a scale accurate to 0.003 gram. Each day I recorded my observations and refilled the cups. On the 8th day, I calculated the total amount of weight that each tooth lost (or gained). Results My initial hypothesis was that the teeth would not dissolve. Based on the negligible amount of weight each tooth lost (from a low of 0.5% to slightly more than 2%), my hypothesis is proved and the wife's tale is disproved. By conducting this experiment for 7 days, not just 8 hours, these teeth were immersed for 168 hours, which is 160 hours more than the wife's tale claim. Conclusions/Discussion One thing surprised me. The teeth soaked in milk gained weight. My family dentist thinks that bacterial action, similar to bottle mouth, might have caused a film to develop on the teeth, adding weight. She also had me check to see if the soda teeth still had their enamel, and they did not, while the milk teeth did.	
Summary Statement Teeth immersed in soda, orange juice and milk for 7 days were weighed to determine if acids in beverages can dissolve teeth.	
Help Received My Mother helped type report and assisted in weighing teeth; Family dentist helped to answer questions; Industry expert help to answer questions; science teacher helped to set up electronic scale.	