



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> Nina E. Rosen	<b>Project Number</b> <b>J0527</b>
<b>Project Title</b> <b>Are Your Fillings Leaking? Comparing Leakage of Three Dental Filling Materials Exposed to an Acidic Diet Soft Drink</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The goal of this experiment was to compare three commonly used dental filling materials to see if they would leak after prolonged exposure to an acidic sugarless soft drink, in this case Diet 7-Up. <b>Methods/Materials</b> Silver amalgam, light-cured composite resin and self-cured glass ionomer fillings were placed in preparations made in extracted wisdom teeth. They were kept in Diet 7-Up which was changed daily for fourteen days. At the end of fourteen days the teeth were stained and then sectioned to see the penetration of the stain into the cavity preparation. <b>Results</b> Results were: Neither composite filling leaked. One of the two silver fillings showed slight leakage. Both glass ionomer fillings leaked extensively. <b>Conclusions/Discussion</b> This project showed that the newer composite resin fillings resist acid at least as well as silver amalgam. However, this answer brings up more questions. For example, what would happen if sugar and bacteria were added in a future experiment? Also, even though it was not part of the experiment, it was interesting to see how the Diet 7-Up dissolved the enamel of the teeth.	
<b>Summary Statement</b> I wanted to find out if fillings would leak if they were exposed to a sugar-free soft drink.	
<b>Help Received</b> Father supplied materials, office equipment and instruction. Mother helped with display background.	