



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> Riley S. Unter	<b>Project Number</b> <b>J2018</b>
<b>Project Title</b> <b>Monster Drinks Make Monstrous Teeth</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The effects of energy drinks, sport drinks, soda, coffee, milk and water on the deterioration and staining of teeth enamel were examined. This study also wanted to study how the drinks affected staining. The results of this studied showed that soda and coffee had the greatest effect of staining on the enamel of the teeth. These drinks also caused the greatest tooth deterioration with severe loss of enamel with no ridges. Water and milk created no harm to the tooth enamel.</p> <p><b>Methods/Materials</b> Materials: 15 cow teeth, 14 containers, 7 different kinds of drinks: Monster Energy drink, Gatorade Sports drink, Coke, Diet Coke, Coffee, Milk and Water. Procedure: Place each tooth in its container. Put Coke in #1, Diet Coke in #2, Monster Energy Drink in #3, Gatorade Sports Drink in #4, Coffee in #5, Water in #6, and Milk in #7. After 1 week take out first set of teeth to examine and record observations. One week later, repeat. Compare teeth that were soaked for 1 week to teeth that were soaked for 2 weeks. Record observations by appearance for staining and enamel erosion.</p> <p><b>Results</b> The control tooth had a stain rating of 2. The teeth soaked in coke stained the worst with a rating of 15, then diet coke with a rating of 14 and then coffee with a rating of 13. No difference was found in teeth that were soaked in milk or water. Teeth that soaked for 2 weeks had more staining on their enamel than teeth that soaked for 1 week. For week 1, the teeth exposed to Monster energy drink and Gatorade sports drink rated a 3 in deterioration. For week 2, Coke, Diet coke and Starbucks coffee rated a 3 in deterioration. The tooth in water had no change.</p> <p><b>Conclusions/Discussion</b> My hypothesis was partially correct. I thought the tooth exposed to Monster energy drink would deteriorate the most, but Coke, Diet Coke and Coffee also had the same deterioration rates. However, the tooth that soaked in the Monster energy drink for 2 weeks appears to have a white substance speckled on the surface of the tooth. I was incorrect in my hypothesis that the tooth exposed to the Monster energy drink would have the worst staining. Actually, the worst staining occurred to the tooth soaked in Coke, then Diet Coke and finally Starbucks coffee. I was correct that the tooth soaked in water would have no change in deterioration or color. I learned the sodas, energy drinks, sports drinks and coffee are very harmful to the enamel of your teeth.</p>	
<b>Summary Statement</b> The Effects of Energy Drinks, Sports Drinks, Sodas, Coffee, Milk and Water on Tooth Deterioration and Staining.	
<b>Help Received</b> Mother typed while I dictated	