



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Ethan M. Ross</b>	<b>Project Number</b> <b>J0520</b>
<b>Project Title</b> <b>Hydrogenated Fat Content Contrariety between Oven Baked and Regular Potato Chips</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective is to determine if oven-baked chips are significantly more beneficial to your health by comparing the saturated fat content of oven-baked chips versus fried potato chips.</p> <p><b>Methods/Materials</b> Selected four styles of chips: Classic Lays, Oven-baked Lays, Ruffles, and Oven-baked Ruffles. Created a fatty solution by soaking proportional amount of chips in water for coextensive duration of time. Then strained and extracted remnants from the mixture leaving a liquid solution for sampling. Using droplets of iodine with constant agitation, I generated a chemical reaction that made the solution purple. Measured and compared increments of time indicating molecular breakdown of the saturated fats until the purplish solution dissipated from the sample.</p> <p><b>Results</b> The iodine significantly took longer to dissipate in the two oven-baked samples because the regular chip samples contain more saturated fats than their counterparts. Saturated fats do not contain double bonds like unsaturated fats do. Therefore, it takes longer for the iodine to break down the fatty bonds indicating that the chips have less amounts of saturated fats.</p> <p><b>Conclusions/Discussion</b> What I learned from this experiment is that oven-baked chips are indeed a healthier choice than regular chips. However, the manufacturers make the labels somewhat confusing to easily detect which brand of chips contains less saturated fats by changing the amount of chips in each bag, along with the serving size. Initially, I thought that the Oven-baked Lays would contain more saturated fats than the Oven-baked Ruffles because the total grams were less on the packaging. However, the amount of ounces contained in the bags were less and the amount consumable per serving size was fewer than the Oven-baked Lays, making it actually more saturated with fat than first expected.</p>	
<b>Summary Statement</b> Testing the hydrogenated fat content in proportional amounts of oven baked and regular potato chips to determine if the consumption of baked chips are significantly more to beneficial your health.	
<b>Help Received</b> Mrs. Ducharme guidance in how to test my theory for saturated fats and vile of iodine to create my mixture; Parents for assistance with timer during the experiment, photography of my steps and results, and purchasing the needed supplies to complete the experiment.	