



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Matthew T. Sinsky	Project Number J0221
Project Title The Effect of Lubricants on Airsoft Gun Accuracy	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal of this project was to find out whether or not different lubricants had an effect on the accuracy of an airsoft rifle. An airsoft gun is a realistic, non-lethal, shooting replica of an actual firearm, which shoots small, plastic BB's. My hypothesis is that the silicon lubrication spray, designed for airsoft guns, will make the gun more accurate than a dry barrel or using simple WD-40 lubricant.</p> <p>Methods/Materials I tested this by firing 100 shots for each of the three groups, which were the dry barrel, the barrel with WD-40 sprayed in it, and the barrel with silicon lubrication sprayed in it. Accuracy was determined by measuring the BB's distance from the center of the target after shooting them from the securely mounted gun.</p> <p>Results The results showed that the dry barrel, or control group, had a medium accuracy level, the WD-40 had the highest accuracy, and the silicone had the least accuracy distance because more than half of the shots completely missed the target. I then ran a friction test using a foil-covered book and a plastic box to help explain my results. The friction test showed that the WD-40 had the least friction.</p> <p>Conclusions/Discussion Surprisingly, the data I gathered proved that the silicone lubrication was the least accurate of the three groups, and the WD-40 was the most accurate. I figured out that because of Bernoulli's Principle (which states that the greater the speed of a fluid [which in this case the air traveling across the BB], the less its pressure), the BB with less spin would not curve as much, and the WD-40 could make that work. Although my hypothesis was proven to be incorrect, I still learned a lot and it had a very interesting outcome, which may turn out to help others in the future.</p>	
Summary Statement This project tested the effect of lubricants on Airsoft Gun accuracy.	
Help Received Jerome L. Sinsky, M.D. helped with testing and Mr. William Fox helped with statistical analysis.	