



CALIFORNIA STATE SCIENCE FAIR 2011 PROJECT SUMMARY

Name(s) Michaela L. Juels	Project Number J1716
Project Title The Effects of Caffeine	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This project was conducted to discover the effects of caffeine and determine if caffeine can be beneficial. Is it better to eliminate caffeine altogether from your diet? If caffeine is beneficial should it be taken daily? And how much of it should be taken? I conducted this experiment to find out just that.</p> <p>Methods/Materials I got three <i>Mus musculus</i>. Everyday for two weeks, I gave one <i>mus musculus</i>, the equivalent of 300 mgs of caffeine to homo sapiens and another the equivalent of 600 mgs of caffeine, and the third I gave no caffeine. The independent variable (the amount of caffeine injected) affected the dependent variable, the <i>mus musculus</i># behavior. I then recorded behavior such as, how much each slept, activity, mood, sensitivity to light and sounds, and any other unusual things. Then I had the <i>mus musculus</i># go through a simple maze three times, in which I recorded each of their times.</p> <p>Results My data and observations showed that the rats with caffeine were increasingly irritable. They were often found trying to get out, ripping their cages, and sometimes even biting. The caffeinated <i>mus musculus</i># showed a sensitivity to light and sound, when I clapped near them, they shuddered, while the non-caffeinated <i>mus musculus</i> did absolutely nothing. The caffeinated ones had a larger amount of excrement than the non-caffeinated ones. The <i>mus musculus</i> with 300 mgs of caffeine had the best maze times and the <i>mus musculus</i> 600 mgs had the worst times. The low caffeinated <i>mus musculus</i> stayed awake the longest and the high caffeinated <i>mus musculus</i> crashed within an hour, and non-caffeinated <i>mus musculus</i> slept most of the time. The caffeinated ones had hyperactivity. This experiment showed that caffeine can be beneficial only in small doses and occasionally, not daily because if used daily it can cause insomnia and irritability as shown in my experiment.</p> <p>Conclusions/Discussion If I did this experiment again I would get more <i>mus musculus</i> to make sure my observations weren't coincidental. I would also inject the <i>mus musculus</i># with needles instead of putting it in their water, because that way I would know for sure the caffeine was being ingested. This experiment arises further questions. Does caffeine help with digestion? Do caffeinated products pose a risk to amounts of sleep? Can caffeine be dangerous? Can a low dose of caffeine help keep you focused?</p>	
Summary Statement Determining whether caffeine is beneficial or harmful through studies with mice.	
Help Received Teacher helped measure grams of caffeine	