



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Jarett A. Grolman	Project Number J0411
Project Title The Stress Effect	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to see the effect of stress on a persons ability to multi-task. I hypothesized that the test subjects performance level would be impaired by about 25%.</p> <p>Methods/Materials 1. The testing device is made out of gold copper tubing that was bent into its current shape. The test subject will use the stylus that has a hook on one end and is attached to a current generating mechanism on the other. 2. Ipad timer 3. Set of headphones 4. Container of ice water</p> <p>To make this testing device I used copper tubing that I bent into its current shape. I then attached this to a current generating mechanism that is located within the clear box. A stylus was attached to the mechanism on one end and the copper tubing on the other. When the stylus contacts the tubing a light illuminates and a buzzer sounds, this indicates that an error has been made.</p> <p>Step 1: A test subject is needed to conduct this experiment. Step 2: Have the test subject sit down and use the test device. The subject will attempt to pass the stylus around the copper tubing with the least amount of touches. Step 3: If the stylus touches the copper tubing, the mechanism buzzes and the light goes on, making it easy to record this error event. Count how many times the subject makes this error. This determines their performance level. Step 4: Once they have completed the task for the first time, have them put their hand, wrist deep, in a container of ice water for the duration of Test 2. (usually 30 to 60 seconds.) Simultaneously they must answer a set of questions that will be played through a set of headphones. In addition, place an iPad timer in front of them. This is to create a mental stressor and their time will not be taken into an account.</p> <p>Results On analysis of the data the following was found: the mean number of errors for the total group of test subjects between performing the test under a state of calmness and a state of stress was 1.94. The median was 2, the mode was also 2, and the range varied from -4 errors to positive 8 errors. The results clearly demonstrate that stress does impair a person's performance on a simple task.</p> <p>Conclusions/Discussion The results supported the hypothesis. Using a simple device, which could be a proxy for everyday tasks and using distraction that occur on a daily basis, we must realize that our performance is impacted and</p>	
Summary Statement My objective was to test the effect of stress on a person's ability to multi-task.	
Help Received Father helped build the device. Parents proof read and edited documents.	