



CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

Name(s) Cole W. Moscaret	Project Number J0723
Project Title Reaction to the Distraction	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my project was to determine if talking on a cell phone created enough distraction to lower your concentration level.</p> <p>Methods/Materials Materials consisted of 2 cellphones, a hands free cellphone device, a ruler, PVC test setup, 5 conversational questions and reference to a Reaction Time conversion table from a 1987 study by Harold Brody, (Brody analyzed the reaction time of tennis players) The conversion table was used in this study to convert results measured in inches into milliseconds. 40 subjects with informed consent were tested in three different reaction tests. Test 1 was a control with no distraction. Test 2 created a distraction for the subject during the reaction test while holding a phone and talking to my test helper. Test 3 was the same as test 2 however a hands free device was used while talking. The reaction test consisted of a ruler dropped from a stationary position. On a verbal "Go", subjects grabbed the ruler with their thumb and forefinger when the ruler was dropped. Where the subjects caught the ruler was recorded as the "drop distance". This drop distance, in inches was converted to a reaction time in milliseconds using the reaction time table from the Brody study. Reaction times were averaged out for all 40 subjects.</p> <p>Results After comparing the subjects in the three reaction tests, data showed that when compared to the no distraction control test, subjects reaction time decreased by 6% while speaking on a hand held phone during the ruler drop test. The addition of a hands free device was thought to minimize the distraction and improve reaction time. Reaction time for the hands free device however decreased by 6% as well when compared to the no distraction control test. Data also showed that men had a better overall reaction time than the women did.</p> <p>Conclusions/Discussion Based on my results, I accept my hypothesis which stated that I believe that talking on a cell phone will create enough distraction to lower your concentration level. I can apply these results to the real world when it comes to understanding that in order to maximize my safety behind the wheel of a car, I must minimize as many distractions as possible and stay focused on the road. Distractions such as talking on a phone, texting or even a conversation with a friend while driving can be life threatening to myself and others if I am not careful.</p>	
Summary Statement My project was designed to understand the level of distraction that is created while talking on a cell phone and to what degree this distraction has an effect on one's reaction time.	
Help Received My father helped me develop my PowerPoint slides and my mother helped in the construction of the PVC reaction test setup with ruler drop, as well as was my test helper who asked the test subjects conversational questions during reaction tests 2 & 3.	