



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

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| Name(s) Branden P. Mooney | Project Number J0628 |
| Project Title Fear Factor II: The Effect of Visual Stimuli on Cognitive Ability | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals This second-year study was designed to test whether fear-inducing two-dimensional visual images would result in an increase in cognitive ability. My hypothesis was that fear-inducing images would heighten cognitive ability, as measured by performance on word recall tests.</p> <p>Methods/Materials Using a laptop computer and a self-designed, interactive Powerpoint presentation, thirteen male and thirteen female participants ages 13 to 18 were shown a series of safe images (small, cute animals). They were then given a short word recall test (Test 1). Participants were then shown a series of images designed to be fear-inducing (spiders, snakes, insects, hypodermic needle injections) and given a second word recall test (Test 2).</p> <p>Results Overall, cognitive performance increased 10 percent for all teens after viewing the fear-inducing images. Results were more pronounced among male teens, with a 20 percent increase on Test 2 after viewing the fear-inducing images. Twenty out of the twenty-six test subjects either increased in cognitive performance in Test 2 or else exhibited no decline. Only six test subjects exhibited decreased cognitive ability on Test 2.</p> <p>Conclusions/Discussion In a previous study (Fear Factor I), I examined the effect of three-dimensional visual stimuli on heart rate using tarantula exoskeletons. In Fear Factor I, increases in heart rate were higher among females. In Fear Factor II, results were more pronounced among male teens, who demonstrated a 20 percent increase on Test 2. A 20 percent increase would mean the difference between a 1700 score and a 2040 score on the SAT. If fear-inducing visual stimuli can raise cognitive performance as my experiment seems to indicate, then watching a very scary movie or looking at fear-inducing images just before taking the SAT might be a good strategy, especially for teen males.</p> | |
| Summary Statement Fear Factor II is a study of how fear effects cognitive ability in teens. | |
| Help Received My father showed me the basics of how to use Microsoft Powerpoint and Excel software programs. | |