



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Jasmine T. Gates	Project Number J0411
Project Title The Psychology of Belief: The Placebo Effect vs. the Power of Suggestion in the Effectiveness of the Velox Energy Drink	
Abstract Objectives/Goals The objective of my experiment is to determine whether a test subject given a placebo energy drink will have a similar rate of improvement (in running and reflex tests) to a test subject that is given the specific facts (actual ingredients) about the drink, but is also given the suggestion that it will improve their energy level and physical performance. I want to determine whether knowing the desired outcomes in an experiment (even if there are not facts or data to support them) will affect the results. Methods/Materials Fake energy drink: Velox (a mix of herbal tea and water in standard water bottles with new labeling I designed), 2 different slide shows (1 for placebo effect group with false information regarding the effect of the ingredients, 1 for power of suggestion group with ingredients listed accurately), fake advertising flier I designed, energy level questionnaire, cups, timer, chalk (for run test) and reflex computer test (Human Benchmark Reaction Time Online Test). Tested 30 subjects (3 groups: Control, Placebo Effect and Power of Suggestion) in 50 meter timed run tests and online reflex tests before and after drinking Velox and being given different information on the 'energy drink'. Results In analyzing the three groups, the Power of Suggestion Group and the Placebo Effect Group showed similar rates of improvement in the 50 meter run test after drinking Velox (as compared to the baselines) and in the reflex test after drinking Velox (as compared to the baselines). Conclusions/Discussion The group that was given the factual information about the ingredients in the Velox energy drink and the suggestion that it could improve energy levels showed improvement in physical performance tests similar to the group that was given the drink as a placebo and given false information on the benefits of the ingredients as well as the desired outcome. This experiment addresses the issues that can arise in any kind of testing based on what suggestions people are given during an experiment.	
Summary Statement I showed that suggesting what should improve after drinking a fake energy drink can have similar results to giving false information on the effectiveness of the ingredients.	
Help Received I designed the Velox labels and had the help of graphic designer Dawn Barnhart in using Adobe software to create the labels and fliers (printed at Kinkos). I created the slide shows and designed the running experiment. I used the Human Benchmark Reaction Time Online Test for the reflex test.	