



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Keith E. Doerschlag	Project Number J1510
Project Title Investigation of Delayed Onset of Motion Sickness using Ginger Brew	
Abstract Objectives/Goals My investigation was designed to test the popular idea that ginger, mostly used as a cooking and flavoring ingredient, could reduce or prevent motion sickness. Based on literature research, it was hypothesized the reported 26 grams of fresh ginger used to make one serving of a favorite all-natural soft drink product would significantly delay the onset of motion-induced nausea in people. Methods/Materials After filling out a survey to verify susceptibility and experiences with motion sickness, volunteer human subjects were blindfolded and seated in a spinning chair apparatus that was then rotated at approximately 24 RPM. Spin trials were done on non-consecutive days without ingesting the test drink, and after paced consumption of one 12-oz bottle of Reed's Extra Ginger Brew. During the spin trials, people were asked every 15 seconds to subjectively rate stomach discomfort in an ascending number sequence of any range they desired. Spinning was stopped by subject's request just before actual illness (vomiting). Numerical responses were normalized to a common 0 to 100 range and these "sensation index" values plotted versus time to gauge whether delayed onset occurred. Results Most tested persons showed about the same or slightly improved resistance to nausea after drinking the ginger brew. One subject, however, almost doubled the chair time before asking to stop. People who rated themselves as less prone to motion sickness had the longest durations in the chair with or without ginger brew, but their resistance to nausea onset actually worsened with the drink. Many individuals reported queasiness went away much faster in the ginger brew trial. Conclusions/Discussion My conclusion is that ginger brew may be mildly to highly effective in delaying motion sickness for some people. A second notable and unexpected beneficial effect seemed to be more-rapid recovery from nauseous feelings once motion was stopped. Unfortunately, ginger brew does not appear to work for all persons. Pharmacology of the test ginger brew might be affected by the drink's preparation (is it heated?), and further studies with fresh or dried ginger root, or the more palatable pickled ginger that accompanies sushi, could help resolve uncertainties in ginger's effectiveness.	
Summary Statement Trial data with human subjects suggests consumption of delicious Jamaican-style ginger beer can delay and reduce the nauseous feelings of motion sickness for many people.	
Help Received Dad provided spin power for the chair. He also helped with the idea of a single 0 to 100 data range for responses, and taught me how to do literature search in UC Riverside library.	