



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Katherine Shanks; Molly Shanks	Project Number S1424
Project Title Queasy Rider: An Investigation of the Efficacy of Non-pharmaceutical Methods of Motion Sickness Prevention	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals In today's modern world, transportation technology is growing by leaps and bounds. Unfortunately, even a short car ride can overstimulate the vestibular system, which will cause extreme disorientation, headache, dizziness, nausea, and overall discomfort. Although there are over-the-counter medications like Dramamine that will curb the symptoms of motion sickness, they have unpleasant side-effects and are not safe for everyone. This project was designed to test the effectiveness of alternative methods for preventing motion sickness without the risks and side-effects of the available pharmaceutical options.</p> <p>Methods/Materials The project began by constructing a homemade rotating Bárány chair from an office task chair, plywood base, and an automotive rear axle wheel bearing equipped with a safety belt. 30 subjects were tested in 3 separate timed trials. On each trial, the subjects were instructed to rate the severity of 8 common symptoms of motion sickness (dizziness, nausea, headache, pale face, sweating, disorientation, fatigue, and vomiting) both before and after rotating in the Bárány chair on a scale of 0 to 10. The subjects were instructed to report the initial onset of symptoms so that the trial would be stopped when the subject began to feel the effects, not when motion sickness had begun to progress in severity. The first trial was a control test without any remedy to test each subject's natural susceptibility to motion sickness. In the second trial, the subjects wore acupressure wristbands on the P6 pressure point; in the third trial, subjects ingested caramelized ginger candy 30 minutes prior to rotating in the Bárány chair.</p> <p>Results The collective group of 30 test subjects responded best to the ginger remedy. The ginger drastically decreased 8 out of 8 symptoms with about an 11% or greater decrease in severity with a 13.93% increase in time before the onset of symptoms. The acupressure wristbands showed a slight decrease in 2 out of the 8 symptoms, but they increased 6 out of the 8 symptoms by over 4%.</p> <p>Conclusions/Discussion Both ginger and acupressure wristbands alleviate some of the discomforts associated with motion sickness, but ginger demonstrated the most potential as a non-pharmaceutical alternative to medicinal remedies without the unpleasant side effects. Ginger is the most effective method to go from queasy rider to easy rider naturally.</p>	
Summary Statement This project was designed to test the efficacy of ginger and acupressure as non-pharmaceutical methods of motion sickness prevention.	
Help Received Father helped assemble the pipe portion of the bearing mechanism in the Bárány chair.	