



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Logan L. Davis-Wallace	Project Number J1508
Project Title Can Soda Cause Abdominal Discomfort?	
Abstract Objectives/Goals My objective was to find out how many people who drank the amount of fructose contained in 32 ounces of soda would malabsorb the fructose and have abdominal discomfort. My hypothesis was that a minority of the subjects tested would malabsorb fructose and show symptoms of abdominal discomfort. Methods/Materials Informed consent was obtained from ten randomly selected people, ages 10 to 52 years old, 5 males and 5 females. After fasting for 10 hours, the subjects were given 8 ounces of water (control group) or 8 ounces of a 20% solution of fructose in water (test group). Hydrogen in the subject#s exhaled air was measured by gas chromatography at 0, 30, 60, 90, 120, and 160 minutes after the fluid was consumed. Results In this study more than half the people malabsorbed fructose. In fact, 70% of the people tested malabsorbed the fructose solution and 71% of the subjects who malabsorbed the fructose showed symptoms of abdominal pain, gas, bloating, nausea and/or diarrhea. Conclusions/Discussion The results of my study did not match my hypothesis. The majority of the subjects malabsorbed the fructose in 32 ounces of soda and had abdominal complaints. The reason I did this study was because fructose is used to sweeten more and more drinks such as juices, energy drinks, sports drinks, as well as soda. People are drinking more of these beverages in larger quantities than ever before. Little do they know that this could make them feel badly and cause unnecessary doctor visits and tests to see what#s wrong with them. People need to know that drinking lots of soda can have these short terms effects, as well as, having the well known long term effect of obesity.	
Summary Statement My study showed that drinking the fructose contained in 32 ounces of soda resulted in fructose malabsorbtion and abdominal discomfort in a majority of my subjects.	
Help Received My Mom and Dad helped with the board display and study design. The gas chromatograph and supplies used for the fructose hydrogen breath tests were provided by the California Digestive Disease Center. Mr. Karsevar helped with the study design and board display. My friends and family served as study subjects.	