



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Daniela Galvez	Project Number J1709
Project Title The Effects of Temperature and Type of Liquid on the Dissolution Rate of Ibuprofen	
Abstract Objectives/Goals The purpose of my project was to determine the fastest way to dissolve Advil Pain Relievers. Methods/Materials For each trial, four labeled beakers were individually filled with water, pomegranate juice, grape juice, and apple juice. Using a timer, I measured how long it took for each form of Advil (tablet, caplet, or gelcap) to dissolve. The experiment was repeated three times, once with cold liquids (from the refrigerator), once with room temperature liquids, and once with hot liquids (heated in the microwave). Results Results of the experiment show that hot water dissolves Advil pain relief tablets the fastest. Individually, results show that tablets dissolved faster than capsules or gelcaps. Results also show that water dissolves all three types of pain relievers faster than the other liquids tested. Conclusions/Discussion The type of liquid, temperature of liquid, and type of Advil pain reliever all had a big impact on the dissolution rate. I predicted that hot apple juice dissolving a liquid gel would have the fastest results but i found that I was incorrect. In the future, people may want to redo this experiment examining the effect of pH of the liquids used to dissolve the pain reliever.	
Summary Statement My project was designed to find the best way for consumers to intake Advil Pain Relieves in order to get fast results.	
Help Received Teacher helped proofread report;Teacher helped organize display board;Mom helped print pictures	