



## Colorado Science and Engineering Fair

## 2024 Individual Project Abstract Form

**Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.**

Title of Project: Drug Solubility

Finalist's Name: Kazlei Vaughn

School and City: Genoa-Hugo, Hugo

Sponsor's Name: Mr. William Mallory

Category: Biomedical Sciences (BMED)

Division: Senior (9th - 12th grades)

Abstract (250 words or less):

People face the problem of needing to know which painkiller is going to give them the fastest relief to help ease their pain quickly. The experiment aims to educate people about painkillers since people use them in everyday life. A painkiller's purpose is to help people with minor pain. Painkillers can do good things for you, which people know about. However, there are many bad things they can do to you that people should be aware of next time they take a painkiller. Hopefully, people can use this information next time they choose to take a painkiller. They can be beneficial and harmful at the same time. An experiment was done to test which medication would dissolve the fastest. The hypothesis for the experiment was that ibuprofen would work the fastest because there have been many experiments that show ibuprofen works the quickest out of aspirin, acetaminophen, and naproxen sodium. Most results have aspirin the second fastest, acetaminophen works the third fastest, and naproxen sodium is the slowest working out of the four. Five of each medication was dissolved in water, and five were dissolved in hydrochloric acid. The amount of time it took them to dissolve was recorded. The results of this experiment showed that ibuprofen dissolved the quickest in both the water and hydrochloric acid, followed by acetaminophen, then naproxen sodium, and lastly, acetylsalicylic acid. In conclusion, the hypothesis was supported, as ibuprofen dissolved fastest.

*I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.*

Finalist's Signature:

Date:

2/28/2024

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. A signed copy of this form must be included in your notebook.