CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
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Project Number
J2104

Project Title
Are Caps on Medication Bottles Really Childproof?

Abstract

Objectives/Goals
All my life I have taken medications because I have Arterial Tortuosity Syndrome, which is a very rare connective tissue and heart disorder. Over time I have taken a variety of medications to help, and ever since I was six years old I have been able to open these so called #child proof# containers in which the medications are packaged. I wanted to see if other young children might be able to open these containers, since many accidental poisonings occur each year due to children ingesting medication not intended for their use.

Methods/Materials
During my experiment, 1 tested the kindergarten and first grade students, I tested 5 different types of childproof medication bottles on each test subject. I gave them up to 30 seconds to attempt to open each bottle. I recorded whether the child was able to open the bottle. If they was able to open the bottle, I documented the number of seconds it took them.

Results
In my experiment I tested a total of twenty students, 12 in kindergarten and eight from first grade. The students all ranged from ages five to seven. The kindergarteners were my first test group. I was alarmed at how quickly many of the bottles were opened. The kindergarteners were able to open three of the five test bottles, approximately 50% of the time. The first graders were able to open four of the five test bottles 50% of the time. One of the medication bottles, the Walgreens bottle, was only opened by one student, a first grader. This container was the only one that seemed to have an effective cap.

Conclusions/Discussion
Through my project, I have learned how ineffective many child proof medication caps are. The students opened many of the medication bottles in less than 2.5 seconds. An example was the cough syrup bottle, which had the least protective bottle cap of the five child proof containers tested. The Walgreens bottle in contrast was very effective in keeping children safe, since only one child was able to open it. More testing should be done to see if other types of child proof medication bottles and other child proof containers are actually helping to keep children safe.

Summary Statement
Testing if many kinds of childproof medication bottles are really childproof

Help Received
None. I designed, built, and performed the experiments myself.