CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY

Name(s)

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Project Number

38386

Project Title

Rain-Walker: An Engineering Project Testing the Efficiency of a Handheld Umbrella vs. an Umbrella Designed for a Walker

Abstract

Objectives/Goals

The objective was to design an umbrella that would be more effective for use with a walker, providing convenience to make a user's life easier, drier, and safer.

Methods/Materials

Using PVC, plastic, Velcro, and a few other materials I designed a collapsible umbrella for a walker. I tested my design for convenience and dryness.

Results

The user stayed one hundred percent dry while using my Rain-Walker design during the trials. When testing my control group (a person holding a regular umbrella while using a walker) the user was on average 58 grams wetter. The user also found the Rain-Walker to be more convenient.

Conclusions/Discussion

The results fully supported my goal of making a easy-to-use, functional umbrella for a walker that would keep users drier and safer when using a walker. Using this new design could revolutionize how disabled people get around in rainy weather. Right now there is not any kind of rain coverage for a walker that is hands-free, so this design is much needed, helping unstable users keep both hands in control of their walker, preventing falls and slips.

Summary Statement

The Rain-Walker was designed and engineered to shield a person using a walker from the rain, without having the inconvenience of holding an umbrella.

Help Received

I designed, built, and performed the experiments myself. My parents helped purchase a few materials and I borrowed my grandmother's walker.