CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY

Name(s)
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Project Number
31019

Project Title
Be Bright. Protect from UV Light!

Abstract

Objectives/Goals
The objective of this experiment is to determine which fabric is the best to wear in the summer for the most UV protection and prevention against skin cancer.

Methods/Materials
Twelve samples of the following: cotton knit, cotton woven, polyester knit, polyester woven, silk woven, silk knit, nylon, and rayon, were used to cover the UV probes under direct sunlight. Percentages of UVA and UVB blockage of the different fabrics were calculated by collecting data prior to each trial (control) and during each trial (independent variables) in microWatts per square meter (mW/m2) .

Results
Cotton woven had the highest average UV protection from both UVA and UVB radiation and rayon had the least. Overall, woven fabrics were more sufficient at protecting and blocking UV radiation than the knit fabrics. Therefore, how stretchy and lightweight a certain fabric is should be considered to determine which fabric would allow for the most UV protection.

Conclusions/Discussion
My hypothesis was slightly disproved by the data collected. Polyester woven, expected to be superior to the other fabrics, followed closely after cotton woven. Heavier and more stretch resistant fabrics block UV radiation more because it allows for less holes and translucency for light to seep through. This study helps explain permeability of UV radiation through different fabrics and light absorbencies to help better draw awareness to the importance of wearing the right clothes in the summer and protecting one#s skin from overexposure to the sun's harmful UV rays.

Summary Statement
The composition of fabrics were tested to determine their effects on UV protection.

Help Received
Mother helped gather materials; Used lab equipment from Tracy High School under the supervision of Mr. Waggle