CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)
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Project Number
J2118

Project Title
Sunscream

Abstract

Objectives/Goals
My objective was to determine if there is any correlation between Sun Protection Factor (SPF) of different sunscreens and the transmisson of UVA from sunlight. I hypothesized that for SPF 15, 30, 50, and 70 the UVA transmisson would decrease with higher SPF.

Methods/Materials
Four sunscreens of varying SPF were spread on a slide. Each slide was placed above the sensor of a UVA intensity meter. Placed in direct sunlight, the meter ran for five minutes taking cummulative measurements of the UVA energy for each slide.

Results
The sunscreens of higher than or equal to SPF 30 were not statistically different. SPF 15 had slightly higher transmission than the others.

Conclusions/Discussion
My hypothesis proved, to a degree, correct. I postulated that sunscreen would diminish UVA energy transmitted, but that the change observed would not be proportional. The data for SPF 30, 50, and 70+ showed no significant differences. Their confidence intervals overlapped. Since the results for SPF 30, 50, and 70+ were statistically similar, the UVA energy transmission was clearly not varying proportionally. The means of SPF 30 and SPF 70+ were very close. The data for SPF 15 was statistically different, but only slightly.

Summary Statement
My project explores the relation between sunscreen's SPF and UVA, the ultraviolet light most commonly linked to skin cancer.

Help Received
Father gave advice and supplied UVA meter from Alere, Mr. Kean D'Cruz created the graph using JMP software.