CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY

Name(s)
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Project Number
J2231

Project Title
The Relationship of SPF and UV Protection

Abstract

Objectives/Goals
To find a SPF level where the protection provided starts to level off. This will educate others about a safe SPF rating that will protect their skin against harmful UV rays.

Methods/Materials
Three separate SPF's of sunscreen were utilized: 15, 30 & 50 SPF sunscreen. Hotdogs acted as the human skin. The hotdogs were lathered up with the three types of sunscreen. A fourth group of hotdogs without protection was included to easily determine how much protection the separate SPF's of sunscreen actually provided. These groups of hotdogs were placed into four separate sections labeled with sharpie on a jelly roll pan covered with foil. The hotdogs were set out in the sun for an extended period of time, 7 hours. Each hour the hotdogs were examined, temperature was taken; observations and pictures were also recorded.

Results
Overtime there was a color and burn difference between each of the four groups. Each SPF provided slightly more protection over the hours. The 30 & 50 SPF sunscreens provided approximately the same amount of protection for the 7 hour period. They were very close!

Conclusions/Discussion
The different SPF levels of sunscreen have a corresponding difference of protection but the higher SPF levels did not provide a significant difference in protection over the 30 SPF sunscreen. From this knowledge gained, one can infer that 30 SPF is the lowest SPF sunscreen needed for the best protection over a seven hour period.

Summary Statement
This experiment provided valid and useful information to people here in southern California by informing them which SPF of sunscreen provides the best protection over an extended period of time.

Help Received
A series of questions answered by Dr. Jim Pettit