# CALIFORNIA STATE SCIENCE FAIR
## 2015 PROJECT SUMMARY

**Name(s)**

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**Project Number**

35496

**Project Title**

# Do SPF Levels in Sunscreen Really Matter?

**Abstract**

**Objectives/Goals**

Sunscreen is known and widely used to prevent damages to skin such as skin cancer and photo aging. While some effects of UV rays are acute and reversible, others are chronic, permanent, and can potentially harm and even kill those affected by it. The SPF level is the ability and length of protection against UV rays. My project was to determine whether or not the different levels of SPF 15, 30 and 70 do a big difference in comparison to each other. I wanted to find out if high levels of SPF are really worth the extra time to find them in the store and the extra money to we pay for them.

**Methods/Materials**

Three different test subjects and three different SPF levels (15,30 and 70) were used.For each test subject, positive control, negative control and different levels of SPF were compared. The test subjects received sun exposure for a certain period of time (varying to the sensitivity of each test subject) then checked afterward for color change. SunPrint Paper was for exposed 90 seconds, UV beads for 40 seconds, and hot dogs for 2 hours. There were three trials for each test subject. The color change of the test subjects were rated on a scale from 1-10.

**Results**

The test subjects tested with SPF 30 and 70 had a very small difference in comparison to each other, which supported my hypothesis. SPF 15 had a more visible difference compared to the other two levels. The original procedure did not work out as well as planned, so it had to be revised multiple times. As an example, on the first few tests,the sunscreen did not cover all of test subject, causing the UV to seep through the exposed areas.By figuring out a suitable way to apply the sunscreen, adjusting the time limit, and making sure that UV rays cannot get through the areas where sunscreen is not being applied, I was able to receive more accurate data for my tests.

**Conclusions/Discussion**

My conclusion is that from SPF 30 and above, the different levels of SPF typically don#t matter and would not do a big difference for your skin protection unless you are very light skinned, have a family history of skin cancer, or have a disease that makes you sensitive to light, which supports my hypothesis.Therefore, if you do not have any of the conditions mentioned above it would be a waste of time and money to get the high levels of SPF if it barely does any difference for your skin. Since money accumulates over time,it saves you plenty in the long run.

**Summary Statement**

This project wants to prove that SPF levels 30 and above provides about the same sun protection against UV exposure so we shouldn#t waste time and money on high levels of SPF.

**Help Received**

I received help from my parents in getting all the supplies needed and organizing the information onto my board.

Preliminary