The Effects of Facial Cleansers on Eyes

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Introduction

There are some face wash brands that are too strong and many have harsh reactions to them. We have found very little studies done on this topic, which propelled us to do it ourselves. In our experiment, we will be testing two face washes (**Cetaphil and CeraVe**) to see which one provides the least reaction on the worms skin, **which has similar sensitivity to our eyes**. We will be testing them at 100, 50, 10, and 1 percent concentrations. Our hypothesis is that the severity of them will go down as they are more diluted, but the cleaning ability will also be compromised. **Our group thinks there will be less of a reaction with CeraVe, a more expensive brand, rather than Cetaphil.**

Materials and Methods

Our procedure includes us placing worms in **one millimeter of facial wash** to record their reactions. More specifically we will be timing outcomes of how long the worms are reacting to the substance with categories of **no, mild, and severe reactions**. We will also repeat each of the tests three times to get more accurate data. We then used statistics to get the least reaction at the highest dilution, starting off with **ANOVA testing and following with Pairwise testing**.

Results

Using data from both the worms, humans, and our statistics, we have concluded that **CeraVe is the least likely to hold any reaction on your eyes when at 10% dilution, while still cleaning your face pretty efficiently.**

Abstract

Although the labels on facial cleanser products suggest their products are “the best”, there is little evidence to support it. To clarify these claims, we decided to **conduct an experiment on worms to test the severity of these products**. Worms were placed in a Petri dish and drops of diluted face washes were poured on them and their reactions were measured. At the end of the study, significant differences were found between two common brands: CeraVe and Cetaphil. Similar to our hypothesis, **CeraVe created statistically no reaction in the worms when we diluted it to 10% face wash**. This was not the case for Cetaphil.

Data Presentation

		Concentration of Face Wash			
Statistical Test		Full Strength	50%	10%	1%
	ANOVA	0.00	0.02	0.03	0.11
Pairwise Testing	CeraVe v Control	0.02	0.01	0.12	-
	CeraVe v Cetaphil	0.01	0.49	0.18	-
	Cetaphil v Control	0.00	0.02	0.02	-

p <= 0.05 Rejects Null Hypothesis that Averages are Equal
Reject = Different
Accept = Same
Did not Change

Data Analysis

We compared our data averages using ANOVA. **ANOVA is a form of statistical testing that can compare multiple sets of data**. ANOVA tells us if the three solutions (CeraVe, Cetaphil, and water) at no reaction to determine if the worms reacted poorly. Then we used a form of pairwise called a t-test to compare each group of two separately.

Our data showed that there was a significant difference in worm reactions for Cetaphil, CeraVe, and water. At 10% concentration the p-value of CeraVe v Control was “0.12” Which supports the null hypothesis that there is no difference between variables tested. This is important because now the reaction of CeraVe (at 10%) will be statistically the same as water.

Before adding 10% CeraVe concentration with makeup.

After adding 10% CeraVe concentration with makeup.

Results: Even though the CeraVe is diluted, it still cleans fairly well

Discussion 55

16.69 million Americans use facial cleansers at least 14 times a week. Big companies use this to sell products and sometimes by stretching the truth. Though many brands claim to be the best, there is not enough evidence done on facial washes to support that. This is why our test is relevant.
With our results **we found that CeraVe is statistically less likely to irritate your eyes then Cetaphil, and 10% concentration of CeraVe will probably have no effect**. Similar to how we predicted. This connects to our daily lives by showing that there could be more effects on our eyes with both Cetaphil and CeraVe with most concentrations. 1% concentration was found to have the same effect as water for CeraVe and Cetaphil.

At the beginning of our testing, we wanted to test the cleaning ability of the cleansers, but found no correlation. In summary, the dirt was washed off with any liquid we tested.
Another challenge found in our experiment was how harshly some of our worms reacted. Sadly with 100% Cetaphil, some of the worms died and we did not repeat that experiment.

Works Cited

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