



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Andrew I. Cardoso	Project Number J1903
Project Title Determining the Effectiveness of Teeth Whitening Paste vs. Natural Remedies	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This project is to determine the most effective way to whiten teeth using natural remedies vs over the counter teeth whitening products. Teeth are stained by the food and drinks that are consumed daily. Teeth whitening is the number 1 requested cosmetic service today and its popularity continues to soar. Americans spent more than 1.4 billion dollars on over the counter teeth whitening products last year alone. That being said, it is essential to determine the safest method of teeth whitening without damaging the enamel leading to early tooth decay.</p> <p>Methods/Materials Test includes 6 independent variables and control group. Obtain molars from dental office. Soak teeth in soda, coffee, pomegranate juice each for 24 hrs. Brush control molars with crest toothpaste daily for 10 days. Repeat with Crest 3D whitening and Colgate Optic Whitening toothpaste. Next mash strawberries and brush with strawberries daily for 10 days. Then rub next test group with olive oil for 10 days. Finally rub banana peel on each tooth in test group for 10 days. Observe each test group for color changes and damages to surface enamel MATERIALS: Gloves, Crest Toothpaste, Molars, Colgate Whitening Toothpaste, Crest Whitening Toothpaste, Coffee, Soda, Pomegranate juice, Olive Oil, Banana peel, Strawberries, Cotton Swabs, Tooth Whiteness chart.</p> <p>Results It has been determined that all the variables used slightly lightened the stained molar. The hypothesis was correct: Crest 3D Whitening tooth paste was the most effective method used to remove stains from Molars. The strawberries were the most effective of the natural remedies, almost as affective as whitening toothpaste and more effective than regular Crest Paste in the control group. The olive oil and banana peel were least effective however did remove some of the stains on the molars.</p> <p>Conclusions/Discussion In conclusion, the whitening toothpaste was most effective at whitening stained molars. However, the chemicals that these contain can be harmful to the enamel on teeth over time. Strawberries would offer a natural solution to whitening teeth, but not always practical and somewhat acidic. Trying to find safe natural remedies would still be more beneficial to the enamel on teeth over time, rather than using over the counter whitening products. Society wants a pretty white smile but, over whitening can be very harmful to teeth causing unnecessary root canals, tooth extractions and decaying of teeth.</p>	
Summary Statement Analyzing the effectiveness of natural remedies versus over the counter teeth whitening toothpastes to produce a whiter smile and protect the enamel on teeth.	
Help Received Mom helped with photos and board. Dentist helped with research and providing molars used in project.	