CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
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Project Number
J1313

Project Title
Antibacterial Soap: Is It More Effective at Preventing Bacterial Growth than Non-Antibacterial Soap?

Abstract

Objectives/Goals
The objective of my project was to determine if antibacterial hand soap is more effective at preventing bacterial growth than non-antibacterial (regular) hand soap.

Methods/Materials
Two drops each of 4 Antibacterial Hand Soaps (2 over the counter/2 hospital brands) and 1 Non-Antibacterial Hand Soap were applied to a wooden kitchen cutting board that was sectioned off with silk tape. Sections were numbered to correspond with numbered petri dishes. Each soap specimen was lathered for a specific time (20 seconds and 2 minute trials) and rinsed with clear running water by a kitchen sink sprayer. Cultures were taken with sterile cotton swabs and applied to petri dishes. A base culture of the cutting board was also taken. Petri dishes were kept in a warm room and observed for bacterial growth over seven days.

Results
The base culture produced the most bacterial growth. Surprisingly, the non-antibacterial soap produced the least bacterial growth when compared to the antibacterial soaps as a group. In both trials, the Dr. Bronners non-antibacterial soap and the Baxter Exidine-4 antibacterial soap produced similar amounts of bacterial growth with the Dr. Bronners having slightly less growth. The remaining antibacterial soaps were very equal in the amount of bacterial growth, showing the most bacterial growth of the studies.

Conclusions/Discussion
I started this experiment expecting that the antibacterial soaps would be most effective at preventing bacterial growth. My conclusion is that antibacterial soaps are not the most effective. While researching this project, I have learned that while we believe we are doing a good thing by using antibacterial products in our homes, the overuse of antibacterial products may be harmful. We may be causing bacteria to become resistant to antibiotics and that makes bacteria stronger.

Summary Statement
My project is to determine if antibacterial hand soap is more effective at preventing bacterial growth than non-antibacterial hand soap.

Help Received
My mom helped me do the timing during my project , helped me set up my petri dish growth observation page and was my photographer. My dad helped me by getting samples of hospital antibacterial soaps and petri dishes.