



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.) Garrett T. Walsh	Science Fair Use Only
Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) The Dirt on Soap: A Comparison of Hand Washing Using Regular and Antibacterial Soap	J1232
Preferred Category (See page 5 for descriptions.) 4 - Chemistry	Division <input checked="" type="checkbox"/> Junior (6-8) <input type="checkbox"/> Senior (9-12)
Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.	
<p>Objective: My objective was to determine which is more effective in killing bacteria, antibacterial or regular soap. My original hypothesis was that antibacterial and regular soap will be similar in effectiveness. Possibly, less bacteria will remain or grow after washing with antibacterial soap.</p> <p>Materials and Methods: A comparison was made of hand washing with regular and antibacterial Suave soap. Samples were made by touching a potato-beef broth-gelatin medium with unwashed and washed fingertips. The samples were incubated for several days in the dark at room temperature. Every eight to twelve hours samples were observed and bacterial growth recorded.</p> <p>Results: The experiment showed that even after three washings bacteria were still present on the fingertips. After incubation, bacterial colonies were present on all samples except the controls. The number of bacteria present on the growth medium inoculated by the unwashed fingertips was very high. After the first wash, the number of bacteria significantly decreased relative to the unwashed samples. The number of bacterial colonies increased after the hands were washed for a second time. After the third wash, the number of bacterial colonies decreased again.</p> <p>Conclusions: The experiment proved that factors other than the type of soap play a big part in the reduction of bacteria. After the first wash, all samples showed reduced bacteria, but there was no difference between regular and antibacterial soap. After the second and third washes, the antibacterial soap samples showed a lower number of colonies. This indicates that the number of bacteria has been decreased, or that an antibacterial residue left by the soap slows bacterial growth.</p>	
Summary Statement (In one sentence, state what your project is about.) My project compares the effectiveness of hand washing with water, with regular soap and with antibacterial soap by counting the number of bacterial colonies present after well controlled washing procedures.	
Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. My mother helped type the report, and assisted me during the experiment (several of the procedures required more than one person).	