



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Erik J. Aidukas	Project Number S0302
Project Title The Effect of Anonymous Testing on Teenage Boys' Hand Washing	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this study was to determine if teenage boys would have measurably cleaner hands if they knew they would be anonymously tested for cleanliness. It was hypothesized that if teenage boys knew that they were being tested for cleanliness, then the presence of microbial growth would be significantly less than boys who did not perceive that they were being tested for cleanliness, even though the swabbed boys who knew that they were being tested also knew that they would never be associated with their sample.</p> <p>Methods/Materials Twenty-six boys saw the observer and experimentation setup. Another 19 boys did not see the observer or experimentation setup. Sterile swabs were used to sample the boys' hands and were swabbed on to agar in petri dishes and incubated for a period of 47 hours. Additionally, 50 teenage boys gave their age and answered a five-question survey about hand washing. Such questions were used to eliminate uncontrolled variables such as peer pressure and to cross validate the results of the swab test.</p> <p>Results The results of the swab test were measured in cm^2 of microbial growth. The average of the boys tested inside the bathroom was 8.5 with a standard deviation of 5.79, and the boys outside was 22.7 with a standard deviation of 9.67. A two-sample t test of the difference between the means revealed a t value of 5.55 and a p value of 3.33×10^{-7}, proving high significance. In two survey questions, 80% of respondents said that they would not change their hand washing if their friends were present. When asked how thoroughly they would wash their hands in a situation like the experiment, 56% said they would wash about the same as always, with 42% consciously saying they would wash more thoroughly.</p> <p>Conclusions/Discussion The results supported the hypothesis that even if test results are not linked to a subject, teenage boys wash their hands more thoroughly when observed. Possible errors may have resulted from the sterility of the petri dishes or the inability to accurately measure the hand washing effort put forth by the tested. Further research could test other ages and girls or test in other socially desirable areas.</p>	
Summary Statement Anonymous testing significantly motivated better hand washing.	
Help Received Westlake High School teachers reviewed writeup; Mother helped type report; Father helped with display.	