



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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Project Title Bugs on Brushes?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Our purpose was to protect teeth against bacteria, by testing toothbrushes stored washed and used in different ways, for bacterial growth. The participants in our project are students from a fourth grade elementary class. These students kept their toothbrushes in their desks and were instructed to brush their teeth everyday after lunch without using toothpaste or water. They were only allowed to rinse their toothbrushes in water once a week in the classroom sink. We analyzed bacterial growth on toothbrushes from the classroom, from home and brand new ones from the store.</p> <p>Methods/Materials First we collected toothbrushes from home, brand new ones from the store and ones in the classroom. We then made a solution of sterile saline, which is a salt solution (salt and water) found throughout your body, including in your mouth. We then swished each toothbrush in its own container of sterile saline. After that, a sample was taken from each container and placed on a sterile petri dish using a sterile glass spreader for each new sample. Each of the petri dishes was then sealed with parafilm and placed in an incubator set at 98 degrees (body temperature) for three days. We then observed the results.</p> <p>Results The results on our graphs clearly show that bacteria is being transported from our mouths and from our outside environment to our toothbrushes, then from our toothbrushes back into our mouths. It also shows that the amount of bacteria grown on the classroom toothbrushes was greater than the amount grown on the toothbrushes from home.</p> <p>Conclusions/Discussion There are bacteria living in your mouth all the time. We discovered that if the toothbrush is not washed or if the bacteria is not removed from it, the bacteria currently residing on its bristles will quickly multiply and be more likely to infect the mouth. However, even the toothbrushes that were washed at home regularly were infested with some bacteria. This demonstrates the fact that our toothbrushes need to be cleaned vigorously. If they become neglected, or not properly cleaned and stored, then the state of one's teeth and gums may become contaminated and stained because of bacterial growth on the toothbrush. These results are significant, because they show that it is essential to keep toothbrushes clean to help maintain healthy teeth.</p>	
Summary Statement To see if prolonged toothbrush use increase bacteria growth.	
Help Received Used lab equipment at Westmont College/ advised by Dr. Percival	