

IS YOUR TOOTHBRUSH CLEAN?

Purpose:

What is the best way to remove bacteria from your toothbrush after brushing your teeth?

Hypothesis:

Soaking your toothbrush in Signal mouthwash for 30 seconds is most effective in removing bacteria.

Materials:

6 New toothbrushes

6 Petri dishes with soy agar

Signal mouthwash (14% alcohol)

Dishwasher used with Electrasol detergent 30X Magnifier

Procedure:

Number each toothbrush and petri dish one through six

#1 Test new toothbrush (control)

#2 Test toothbrush - brushing for 1 min. and no cleaning

#3 Test toothbrush - brushing for 1 min. and rinsing the toothbrush with cold water for 30 secs.

#4 Test toothbrush - brushing for 1 min. and rinsing the toothbrush with hot water for 30 secs.

#5 Test toothbrush - brushing for 1 min. and soaking the toothbrush in Signal mouthwash for 30 secs.

#6 Test toothbrush - brushing for 1 min. and clean in the dishwasher using Electrasol detergent, normal cycle & air dry

Scrape each toothbrush across the agar in the petri dish for each test. Allow the bacteria to grow and monitor daily the bacterial growth, measuring the number and size of bacterial groups.

Final results (number and size) on day 10:

Dish #1, 1 >4mm

Dish #2, >1000 <1mm

Dish #3, <150 <1mm

Dish #4, <50 <1mm

Dish #5, <10 <1mm

Dish #6, <100 <3mm

Conclusion

Microorganisms are found everywhere. Bacteria, yeast, fungi, viruses, protozoa and other forms are common in your mouth. There are various types of oral bacteria, coccus-forms, bacillus-forms, and spiral-forms. Brushing after every meal is important to remove any plaque to prevent cavities. Dental plaque is a mixture of food and bacteria that sticks to your teeth. After brushing your teeth, a toothbrush will have bacteria.

What is the best way to clean your toothbrush after brushing your teeth? I tested five different ways to clean a toothbrush. I recorded the number and size of the growth of the bacteria in six petri dishes. If you do not clean a toothbrush after brushing, thousands of bacteria will grow in petri dishes with soy agar. Agar is jelly-like substance which is made from seaweed. Agar is used as a culture for growing bacteria for scientific work. Rinsing with cold water or using a dishwasher was not very effective.

The best way to clean your toothbrush, which grew very few bacteria, was soaking your toothbrush in Signal mouthwash for 30 seconds which confirmed my hypothesis. Signal contains 14.5% alcohol which is effective in killing bacteria. Rinsing your toothbrush with hot water for 30 seconds also reduced the number of bacteria, but not as well as Signal.

Future testing should be done comparing different mouthwashes or various lengths of time necessary to clean your toothbrush in a mouthwash.