

AN INFECTION CONTROL PROCEDURE THAT IS THE PATIENT'S RESPONSIBILITY

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Just when we think we've been asked every question, one that seems so simple makes us pause. In my preventive dental practice, I try to keep up to date with all the new toothbrush shapes, toothpastes and flosses. To answer the question of what is best—peroxide, tartar controls, whiteners—is a constant quest. So when my 12-year-old daughter asked me after dinner one evening, "Mom, how do you clean your toothbrush?" I tried to recall what dentistry, hygiene and periodontics literature has recommended.

Not immediately recalling anything specific, I looked at the toothbrush boxes to see what the manufacturers recommended. Nothing. Even my dinnerware comes with more information on upkeep and hygiene. What followed was the topic my daughter had been looking for for her sixth-grade science fair project. Which method cleans a toothbrush best?

SPARSITY OF PUBLISHED INFORMATION

As part of the research for her

project, my daughter performed a MEDLINE search on toothbrush hygiene. Out of more than 16,000 articles about toothbrushes, she found only

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two articles pertaining to sanitization. One article recommended use of a sanitizer that uses an ultraviolet light to decontaminate the brush.¹ This device may be in your office, but very likely is not in your home. The other article tested various mouthwashes in a bath to disinfect the toothbrush.² How many of us know what type of mouthwash to use or what the recommended soaking time is? (The study found that soaking the toothbrush in Listerine [Warner-Lambert Co.] for 20 minutes was the most effective procedure.²)

I strive to prescribe reason-

able and effective treatments for my patients so that under the "keep it simple" principle, these treatments will become part of their routine care. Only the most health-compromised patients would probably consider buying a sanitizer. The mouthwash soak is a fairly reasonable idea if one has from 20 minutes to two hours free in the morning or evening. What can we do now, at home, to clean and sanitize our toothbrushes?

Think of the procedures and materials we use in our offices: chair disinfection, plastic wrapping, counter decontamination, autoclaving, gloves, goggles and masks. Yet, we are satisfied with only rinsing our toothbrushes when we get home. Which infection control guideline does that satisfy?

For the science fair project, my daughter tested four at-home cleaning methods:

- rinsing only;
- soaking in boiling water;
- soaking in dishpan soap;
- washing in a dishwasher.

RESULTS

Using agar dishes to culture the results of each cleaning method, my daughter found that the dishwasher was the most effective method of cleaning toothbrushes. It sustains a higher heat for a longer period of time than anyone can tolerate while hand-washing dishes. If you consider the dishwasher to be

better for your forks than hand washing, isn't it also better for your toothbrush? If a dishwasher is not available, hot water and dishpan soap are the next-best choice.

Boiling water was more damaging to the brushes than were the other methods: they bent and warped, but were clean. The dishwasher was, in fact, kinder to the brushes over the normal life of a toothbrush, which I consider to be about three months. Which was the worst method to clean the toothbrush? Rinsing. Even if the brush has been used only one time, rinsing alone is not going to clean it.

A few other interesting results came out of this experiment. We found that the toothbrush should be cleaned after every use, and why not? That is the routine protocol in my office for any instrument. The tooth-

brushes in our home are now color-coded, with each family member having his or her own assigned color. We each have three or four toothbrushes to rotate in case the dishwasher doesn't get unloaded in time for

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the next use. Only cleaned brushes go into the bathroom.

Interestingly, even when one of us gets a cold, it doesn't seem to linger. My children haven't missed any school since we began this protocol. It is not all due to this cleaning procedure, but also

the awareness of our own infection control responsibilities.

So Megan won her science fair project. She then went on to win first place in the junior division at the 42nd Southeast Wisconsin Science and Engineering Fair held at Marquette University. She also was awarded the Wisconsin Society of Periodontists Award for Excellence in Table Clinic-Dental Hygiene at the 126th Annual Session of the Wisconsin Dental Association. All of this in search of an answer to a simple question: Which method cleans a toothbrush the best? ■

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1. Glass RT, Jensen HG. The effectiveness of a U-V toothbrush sanitizing device in reducing the number of bacteria yeasts and viruses on toothbrushes. *J Okla Dent Assoc* 1994;84(4):24-8.

2. Caudry SD, Klitorinos A, Chan EC. Contaminated toothbrushes and their disinfection. *J Can Dent Assoc* 1995;61(6):511-6.

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