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Mary Govoni, CDA, RDA, RDH, MBA | Infection Prevention

Safe and effective instrument cleaning

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CLEANING DENTAL INSTRUMENTS is the first and very **critical step** in processing them for reuse. If debris is not removed from instruments, the sterilization process will not be effective since the steam or chemical vapor in a heat sterilizer must contact the instrument surface.

The challenge that many dental team members face is how to effectively remove the debris without putting themselves at risk of exposure to puncture from the contaminated instrument or from spatter of the debris (blood or saliva) on the instruments. Hand-scrubbing of instruments can be an effective cleaning method. It is risky, however, in terms of puncture and/or spatter potential. The Centers for Disease Control and Prevention (CDC) recommends only selective hand-scrubbing of instruments, using an ultrasonic instrument cleaner or an instrument washer as the primary method of cleaning contaminated instruments.

The most common method of cleaning instruments that I have observed in dental practices is the use of an ultrasonic cleaner. These units use high-frequency sound waves to produce agitation or cavitation in a detergent solution to remove debris. The use of enzymatic solutions in these increases the effectiveness of the cleaning process, as these products are more effective in removing blood from instruments than general purpose cleaners.

Some examples of enzymatic cleaners are Brite Shield from Premier, Empower from Kerr Total Care, Enzymax from Hu-Friedy, Purit from Biotrol, and ZymeX from Sultan. Many of the dental suppliers also have their own brands of enzymatic cleaners.

In addition, there are several enzymatic products that are designed to pretreat instruments before the cleaning process. Some of these products are Empower Foam from Kerr Total Care, Enzymax Spray Gel from Hu-Friedy, and ProEZ foam from Certol. They can be applied to instruments prior to transport to the sterilization area to prevent blood and other debris from drying on the instruments. These products are especially useful with surgical instruments.

If instruments are not completely clean after having been run through the ultrasonic, some trouble-shooting procedures should be implemented.

First, determine whether the instruments have been allowed to sit in the processing area for a long time. This

allows debris to dry on the instruments. Keep in mind that cements and other restorative materials most likely will not be removed in the ultrasonic cleaner. It is best to clean these materials off instrument tips before the materials set up, or use specialized solutions, such as cement removers, to clean these instruments.

Place the instruments in the ultrasonic tank, or a holding solution, as soon as they are removed from the treatment area. Make sure that the appropriate cycle time is being used for the ultrasonic unit. Always consult the manufacturer's instructions. Avoid overloading the ultrasonic unit. This may prevent the solution from circulating around all the instruments.

If instrument cassettes are used, make sure that the ultrasonic unit is large enough to accommodate the instruments, allowing the cassette(s) to be completely submerged in the solution. Periodically test the ultrasonic unit for effectiveness, using aluminum foil. A sheet of foil the length and depth of the unit is suspended vertically into the cleaning solution (without instruments) for 30 seconds. The presence of pin holes or dents evenly distributed throughout the foil indicates it is working properly. L&R Ultrasonics provides free ultrasonic test kits, available through its website at www.lrultrasonics.com/industries/dental.

Instrument washers are not commonly used in smaller dental practices, but are becoming more common in large practices as well as schools and clinics. These washers will accommodate larger quantities of instruments and provide a higher level of automation of the instrument cleaning process since the instruments are not only cleaned but rinsed and dried in the units.

The SciCan's HYDRIM is an example of an instrument washer. The Lava 50 from Tuttenauer and the Washer-Disinfector from Miele are not only instrument washers, but also provide high-level disinfection of instruments in preparation for sterilization. It is important to note that, although these units look and function much like a dishwasher, dishwashers are not FDA-cleared devices and should not be used for washing instruments in dental facilities.

Remember that cleaning instruments is a critical step in infection prevention. Choose the method that is the safest and most effective for your practice. **DE**

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