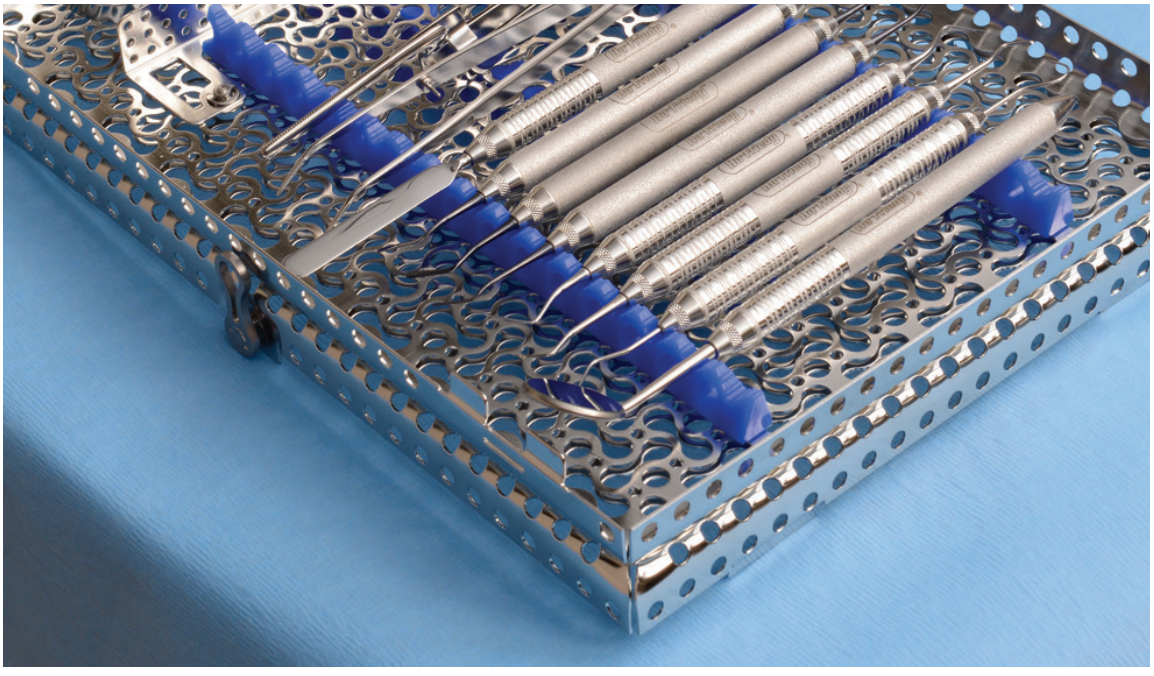
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Instrument cleaning: Why, who, and how?

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CLEANING ANYTHING CAN SEEM LIKE AN ENDLESS AND THANKLESS TASK, and soiled and contaminated dental instruments are no exception. All reusable instruments must be cleaned prior to packaging and sterilization, and this process should take place continuously throughout the workday.

Clinical personnel who process instruments may consider this portion of the job to be never-ending and unappreciated; however, for the safety of both clinical personnel and patients, it is vital. This article will discuss the details of instrument cleaning, including why it's important, who's responsible, and how it should be performed.

WHY?

As instruments are used on patients, they become soiled and contaminated. One might ask, "Why is initial cleaning necessary if an instrument is to be placed into an autoclave for sterilization?" It may seem that remaining debris on an instrument would be free of live microorganisms after removal from the autoclave—thus considered safe for use. However, this is not the case. If debris is not removed, microbes may survive the sterilization process, which can lead to health-care-associated infections (HAIs). Inadequate cleaning can also result in other adverse outcomes, such as tissue irritation from residual chemicals.[1] All organic (blood, calculus, plaque) and inorganic (composites, cements) debris must be removed to achieve sterility.

WHO?

Behind the scenes of clean dental instruments lie the Food and Drug Administration (FDA) and dental product manufacturers. The FDA regulates the safety of medical and dental devices and updated its regulations in March

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2015.[1] In brief, the FDA requires that manufacturers provide medical devices that *can* be cleaned (if reusable), and it requires manufacturers to give specific instructions to those who reprocess such devices. If no instructions are given, a device is considered to be "single-use" and must be discarded after use.

A common misunderstanding in clinical dentistry regards the reusability of burs, as reusable and single-use burs often appear identical to the naked eye. However, if a bur package includes instructions for cleaning, it is reusable; if no such instructions are present, it cannot be reliably cleaned, and legally, it must be discarded after use.

Manufacturers of dental products must comply with FDA regulations and must provide information about the "intended use" of their products. For example, only products intended for ultrasonic cleaning and presoaking should be used for this purpose. Manufacturers must also include instructions for cleaning that are feasible, comprehensive, and understandable by clinical personnel.

While the FDA and manufacturers have important roles to play, clinical personnel have the ultimate responsibility in keeping instruments clean. Those who process instruments must provide clean and sterile instruments for each and every patient.

HOW?

Dental personnel must adhere to two different types of instructions for proper instrument cleaning: the cleaning instructions provided by the manufacturers of dental devices and those supplied by the manufacturers of infection control products. In addition, clinical staff should be compliant with CDC guidelines, at minimum.[2]

The CDC Guidelines for Infection Control in Dental Health-Care Settings (2003) are the primary guidelines for dental infection prevention and safety. This document includes recommendations for instrument cleaning. Instruments may be cleaned via an ultrasonic (effective; low risk of injury; used by most dental facilities), an instrument washer (most effective; least likely to cause injury), or manually (least effective; greatest risk of injury; least preferred).

CLINICAL TIPS FOR INSTRUMENT CLEANING

- Know which devices are considered to be reusable and which are single-use. Discard single-use items appropriately after use.
- Follow manufacturers' instructions for cleaning dental devices.
- Follow manufacturers' instructions for infection control equipment and products, such as ultrasonic cleaner, dental instrument washer, and ultrasonic cleaning solutions.
- Maintain instructions for all personnel who process instruments.
- Post instructions (or a summary of instructions) at the point-of-use.
- If a manufacturer's instructions are unclear, do not hesitate to call the manufacturer for clarification.
- Make sure the correct product is used as intended. Example: Never use glutaraldehyde in an ultrasonic or as a holding solution.
- Make sure that the correct amount of product is used. Example: Hu Friedy Enzymax Earth ultrasonic cleaner packets make one gallon of solution each. If you're using a two-gallon ultrasonic tank, two packets must be used.
- Remove dental materials (cements, composites, glass ionomers) from instruments immediately after use. Once hardened, these products cannot be removed via automated cleaning equipment.
- Consider using enzymatic solutions, such as Enzymax Spray Gel, for precleaning to prevent drying and begin the breakdown of organic debris.
- When cleaning instruments, wear puncture-resistant utility gloves, protective eyewear, a mask, and a gown. Use a long-handled brush to prevent injury.
- Never reach into trays or containers holding sharp instruments that cannot be seen.
- Use a strainer-type basket to hold loose instruments or instrument cassettes in an ultrasonic and for instrument removal.
- Rinse instruments and cassettes thoroughly after cleaning to remove residual chemicals and prevent discoloration.
- Ensure that instruments and cassettes are fully dry prior to wrapping and sterilization. This will help ensure that instrument packs emerge dry from the autoclave, and it will enhance their longevity.
- Always inspect instruments after cleaning. Look for residual debris (recleaning the instruments, if necessary), as well as broken or worn instruments. Use adequate lighting and a magnifying glass, if necessary.

CONCLUSION

The FDA establishes regulations, while manufacturers provide cleanable products, instructions for cleaning, and products used for instrument decontamination. Clinical personnel, however, are ultimately responsible for providing clean and sterile instruments for patient care. With correct product usage, compliance with CDC guidelines, and attention to instructions for use, dental staff may successfully and safely clean instruments. As the reprocessing cycle is completed and instruments and cassettes are autoclaved, clinicians may rest assured that sterility has been achieved. While the cleaning process may seem like an endless and thankless task, patients will remain appreciative. DE

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