

# RECOMMENDED STEPS IN CLEANING, STERILIZATION & MAINTENANCE OF SURGICAL INSTRUMENTS

## 1. HOLDING / PRESOAK

It is important never to hold instruments in a dry container, which allows blood and debris to dry onto instrument surfaces and makes cleaning more difficult. If rinsing and decontamination processes are not immediately available, pre-treat instruments or hold them in a neutral pH holding / presoak enzymatic solution after patient use but before actual cleaning. Instrument Prep Enzyme Foam (3-760) is a ready to use foaming spray for pre-cleaning of soiled instruments and scopes. Simply spray on the instrument until ready for rinsing and disinfection. Also, EZ-Zyme (3-755) neutral pH all purpose multi-enzyme concentrate is ideal for instrument presoaking and pre-cleaning. As soon as possible, rinse, disinfect and clean as follows:

## 2. RINSING

Immediately after surgery, remove organic materials by rinsing instruments under warm (not hot) running water. Rinse should remove most blood fluids and tissue. Do not process dissimilar metals (stainless, copper, chrome plated, ect.) together. Always wear safety protection gear

## 3. DISINFECTING

To protect medical personnel from contamination during cleaning, immerse instruments completely in an EPA approved disinfectant for approximately 10-20 minutes. Always closely follow manufacturers' recommended disinfecting time and solution preparation instructions. Then rinse again.

**Caution:** Disinfected instruments are NOT STERILE. Never expose stainless steel instruments to bleach or any other corrosive chemicals to disinfect. Exposure to bleach may result in instrument pitting and will void the manufacturer guarantees.

## 4. CLEANING

All blood, dried body fluids and tissue should be completely removed from the instruments prior to sterilization. Several methods are available.

- A. SOAK: An enzymatic cleaner bath (soak) such as EZ-Zyme (3-755) or a solution of water and neutral pH (7) detergent such as Surgical Instrument Cleaner (3-720) are effective in the removal of organic material from instruments. Use distilled water if possible. Instruments should be fully submerged for at least 10 minutes. Do not let "sharps" touch each other and be sure dissimilar metal instruments are separated. Rinse instruments under running water to remove solutions. Change solutions frequently.
- B. ULTRASONIC CLEANING: Most instrument manufacturers recommend ultrasonic cleaning as the most effective way to clean surgical instruments, particularly those with hinges, box locks, and other moving parts. All instruments must be fully submerged in open position. Use distilled water if possible. Make sure that "sharps" blades do not touch other instruments to prevent possible surface scratching and also be sure dissimilar metal instruments are separated. Process instruments for full recommended ultrasonic cleaning

cycle. Change solutions frequently, or as often as the manufacturer recommends. Rinse instruments with water to remove the cleaning solution.

- C. **AUTOMATIC WASHER STERILIZERS:** Follow manufacturers' recommendations but ensure instruments are lubricated after the last rinse cycle and before the sterilization cycle. **CAUTION:** Needle holders and forceps may crack if sterilized with ratchet in the closed position.
- D. **MANUAL CLEANING:** If ultrasonic cleaning is not available, observe the following steps:
- Use stiff nylon cleaning brushes (3-1000). Do not use steel wool or wire brushes except specially recommended stainless steel wire brushes (3-1001) for instrument serrated areas, bone files, burs or on stained areas of knurled handles.
  - Use only neutral pH (7) detergents such as Surgical Instrument Cleaner (3-720). If not rinsed off properly, low pH (acidic – less than 6 pH) detergents break down the stainless protective surface resulting in pitting and/or black staining. High pH detergents (alkaline – more than 8 pH) can cause brown stains (phosphate surface deposit) which can also interfere with the smooth operation of instruments. Most brown stains are not rust and are easily removed with Surgical Instrument Stain Remover (3-740).
  - Brush delicate instruments carefully, and if possible, separate them from general instruments.
  - Make sure instrument surfaces are visibly clean and free from stains and tissue. Surgical Instrument Stain Remover (3-740) can help remove residue stains. This is also a good time to inspect each instrument for proper function and condition.
  - Check scissors' blades to ensure proper function. Blades should glide open and close smoothly. Test cutting performance at  $\frac{3}{4}$  length of the blade with the following recommended materials. Scissors should cut all the way to the tips. Recommended cutting test material:
    1. Fine/Delicate scissors: Surgical glove
    2. Medium scissors: Single layer of stocking/cast netting
    3. Large/Utility scissors: Double layer of stocking/cast netting
  - Check forceps (pickups) for proper jaw alignment. Teeth must meet properly – without catching.
  - Check hemostats and needle holders to ensure jaw tips close in first ratchet position and entire jaw should close in the third ratchet position. Check instruments for loose hinges and verify that they lock and unlock easily. Also check instruments for wear on jaw surfaces.
  - Suction tubes should be cleaned inside.
  - Retractors should function properly.
  - Cutting edge instruments and knives should be sharp and free of damage.
  - After scrubbing, rinse instruments thoroughly under running water. While rinsing, open and close scissors, hemostats, needle holders and other hinged instruments to make sure the hinged areas are rinsed out and no debris remains.

## 5. AFTER CLEANING

Separate dissimilar metals prior to sterilizing/autoclaving. If instruments are to be stored, let them air dry and store them in a clean and dry environment.

## 6. AUTOCLAVING

- A. Lubricate all hinged instruments which have any metal to metal action, at the screw or box lock. A non-silicone, water-soluble surgical lubricant such as Spray Lube (3-700) is recommended. Do not use industrial oils or lubricants.
- B. Sterilize instruments either individually or in sets.
- Individual instruments: Disposable paper or plastic pouches are ideal. Make sure to use a wide enough pouch for instruments with ratchet locks so instrument can be sterilized in the open position. Instruments locked during autoclaving can experience cracked hinges or other problems because of heat expansion. If wrapping instruments, make sure towel does not contain detergent residue, which can stain instruments.
  - Instrument sets: Unlock all instruments and sterilize in an open position. Place heavy instruments on the bottom of set. Do not overload the chamber because an air pocket may form that hinders steam penetration.
  - **CAUTION:** With most portable tabletop autoclaves, at the end of the autoclave cycle and before the drying cycle, unlock the door and open it no more than a crack, about ¼" (6.4mm). Then run the dry cycle for the period recommended by the autoclave manufacturer. If the autoclave door is fully opened before the drying cycle, cold room air will rush into the chamber causing condensation on the instruments and may cause water stains or cause wet packs. Make sure autoclave filters and chamber are cleaned as recommended by the manufacturer. If you have any unusual staining on your instruments after sterilization, contact your local representative.

## 7. CHEMICAL/COLD STERILIZATION

Most chemical/cold sterilization solutions render instruments sterile only after 10-hour immersion. This prolonged chemical action can be more detrimental than the usual 20-minute autoclave cycle. If the instruments need to be disinfected only, a chemical/cold sterilization soak is acceptable, as disinfection will take approximately 10 minutes or more. Check manufacturers specifications. **Keep in mind the difference between sterile and disinfected. Instruments with Tungsten Carbide jaws are not recommended for chemical/cold sterilization.**

**For any question or concerns please feel free to contact us:**

**1-866-412-7867**