

## **Pre-sterilization cleaning and disinfection of instruments**

The Department of Health (DOH) states:

'All surgical instruments that are used in the clinical environment should be decontaminated without exception. For example, it is unacceptable to process only those instruments that come into direct patient contact, all instruments and instrument trays opened in the clinical environment should be decontaminated between uses.'<sup>(1)</sup>

Before decontamination is undertaken it is important to make sure the device intended for reprocessing is suitable for re-use and is not a single use device. All single use devices carry the following symbol.



Having verified the device is suitable for re-processing it is important to establish the recommended method of decontamination. This should be provided by the instrument/device manufacturer and is detailed in BS EN ISO 17664 'Information to be provided by the manufacturer for the processing of medical devices'.

Pre-sterilization cleaning and disinfection is extremely important in reducing the possible transmission of all micro-organisms in particular, the abnormal protein prion that is known to cause vCJD. If an instrument has not been cleaned effectively it will never achieve sterility.

Pre-sterilization cleaning may be performed by either mechanical or manual means.

### **Mechanical Cleaning**

The DOH states:

'Automated cleaning methods provide a number of advantages over manual methods, this includes the provision of efficient, reproducible processes that can be

more easily controlled and validated than manual methods.'<sup>(1)</sup>

### **a) Washer Disinfectors**

Small capacity washer disinfectors suitable for local decontamination are now readily available, and offer the most effective method of pre-sterilization cleaning. These perform the cleaning and disinfection stages in a closed circuit system and contact with contaminated instruments is kept to a minimum. Washer disinfectors are designed to process instruments directly from the patient, negating the need for time-consuming hand washing or ultrasonic cleaning. Thermal disinfection<sup>(2)</sup> takes place in the final stages of the cycle.

Note: Not all washer disinfectors now available are compliant with HTM 2030.<sup>(3)</sup> If this is a requirement check before purchase.

### **b) Ultrasonic cleaners**

Most ultrasonic cleaners used in the Primary Care setting are stand-alone baths. They use a combination of water, detergent and ultrasonic activity to remove gross soiling on reusable medical devices.

In order for ultrasonic cleaning to be effective, it is important to follow the manufacturer's instructions for use, particularly with reference to the prescribed measurement of detergent and the specific time required for ultrasonic activity.

All ultrasonic cleaners should be drained and cleaned following each clinical session. Instruments should be placed in the unit prior to activation. Units should have close fitting lids and should not be operated whilst the lid is open. This helps prevent misuse as well as the danger from emission of aerosol during operation. All operators should be equipped with the appropriate personal protective equipment (PPE) full details of these requirements will be included in the instructions for use supplied

with the ultrasonic bath. If not, seek guidance from the manufacturer.

Note: Not all instruments or devices are suitable for ultrasonic cleaning – If in doubt, check the instructions for decontamination supplied with the instrument.

Following ultrasonic cleaning instruments should be thoroughly rinsed and dried prior to autoclaving.

### Manual Cleaning

Manual washing is the least efficient method of cleaning, with many factors affecting the safety and efficacy of the process. These include:

- The level of training and the conscientiousness of the operator.
- Condition and designation of the cleaning area. If the space is shared for other tasks there is a high risk of cross infection, via spreading of bacteria across unclean surfaces and cleaning equipment.
- Water temperature – should not exceed 45°C, as temperatures above this coagulates blood subsequently will adhere to surfaces more readily.

If manual cleaning is the only choice then it should be conducted in a dedicated area, using the following method.

- Personnel should be fully equipped with the appropriate personal protective equipment PPE. (e.g. Apron, gloves and visor, a first aid kit and eye wash bottle should be available nearby).
- Fill the clean sink with water and detergent (at the correct temperature and dilution).
- Fully dismantle or open the instrument to be cleaned and immerse in water, ensuring that air does not remain trapped in hollow instruments.
- Vigorously clean each instrument, by brushing, agitating or jet washing to remove any debris. Make sure this is undertaken under the surface of the water to prevent this risk of aerosol infection.
- Remove the instrument from the sink and drain before rinsing in the second sink.
- Remove, drain and dry.

- Pack any item required for aseptic storage. (Remember wrapped items must only be processed in a vacuum autoclave).

Following cleaning and disinfection all instruments should be thoroughly inspected. Items that are not completely clean should be rejected and returned for further cleaning.

Items should also be checked to ensure they function correctly. Damaged items should be rejected, and either passed for repair, following the guidance for decontamination found in MHRA DB 2003 (05), or disposed of.

### Preparing instruments for autoclaving

Instruments for immediate use or those not required to be sterile at point of use may be processed unpacked.

Any item which is to be stored aseptically should be packed in a pouch. Pouches should be sealed correctly to ensure no ingress of air. Pouched items should only be processed in a **vacuum autoclave**.

1. NHS Estates, Department of Health, 'Protocol for Local Decontamination of Surgical Instruments.'
2. Thermal disinfection (i.e. is disinfection by moist heat, is the disinfection of choice for all medical devices which come into contact with patients and which are not heat sensitive.)
3. See Advice Sheet No 6

#### SES Little Sister Benchtop Autoclave Advice Sheets

- |      |   |
|------|---|
| No 1 | The Decontamination Cycle                   |
| No 2 | Pre-sterilization Cleaning & Disinfection   |
| No 3 | Selecting A New Autoclave                   |
| No 4 | Best Practice in Use of Benchtop Autoclaves |
| No 5 | Autoclave Testing                           |
| No 6 | Health Technical Memoranda                  |
| No 7 | Frequently used terms                       |

For copies of the above please contact  
Eschmann Customer Service Tel: 01903 753322

The Eschmann name & logo are registered trade marks of Eschmann Holdings Ltd. Little Sister™ is a trade mark of Eschmann Holdings Ltd. PS 195 July 2003