How to Clean and Disinfect Instruments in Personal Service Establishments

Effective cleaning and disinfection or sterilization of reusable instruments is essential to preventing the transmission of infectious diseases in Personal Service Establishments (PSEs). Cleaning is required before disinfection or sterilization, as disinfectants and sterilant cannot penetrate dirt, debris, or biological material.

Instrument Classification (The Spaulding Classification)

The level of reprocessing required for an instrument depends on its intended use and the potential risk of infection it poses. This is determined by the Spaulding Classification.

Classification	Definition	Minimum Reprocessing Level Required	Examples of Instruments/Devices
Critical Items	Punctures the skin or enters sterile tissues of the body	**Sterilization** Destroys all microbial life, including spores	• Tattoo and piercing needles • Body-piercing jewelry • Reusable needle bars and grips • Surgical instruments • Foot care/podiatry equipment used for invasive procedures • Straight razors
Semi-Critical Items	Contacts non-intact skin or mucous membranes but **does not** puncture them Any equipment, instrument or item used to hold, manipulate or contact a critical item	**High-Level Disinfection (HLD)** Destroys all microorganisms except a large number of bacterial spores	• Metal grater foot files • Tweezers used to expose ingrown hairs • Equipment for acne treatments • Microdermabrasion • Microblading handles • Microneedle roller handles • Reusable electrolysis tip/cap • Eye goggles

Classification	Definition	Minimum Reprocessing Level Required	Examples of Instruments/Devices
Non-Critical Items	Intended to only contact intact skin/hair; however, risk of contact with non-intact skin or mucous membranes	**Intermediate-Level Disinfection (ILD)** Destroys most bacteria including tuberculocidal strains, most fungi, viruses, but it does not kill bacterial spore	• Ear piercing guns • Tattoo machines • Tweezers • Cuticle nippers • Reusable metal nail files • Ear specula • Pedicure bowl
	Touches only intact skin/hair or has no direct contact with the client	**Low-Level Disinfection (LLD)** Cleaning alone may be acceptable in some cases if an item is not visibly soiled or contaminated. example: client chairs	• Combs and brushes • Service trays • Work counters • Treatment beds and client chairs • Clippers, trimmers and scissors (If cuts the skin then can be classified as semi-critical items requiring HLD) • Guards • Tweezers.

Step-by-Step Instrument Reprocessing Cycle

All reusable instruments must follow a defined reprocessing cycle (cleaning and disinfection or sterilization).

Pre-Clean / Presoak

Action: If immediate cleaning is not possible, the equipment or instruments must be kept wet with detergent and water, an enzymatic cleaner or soaking solution until they can be cleaned.

Purpose: To prevent blood, protein, and debris from drying onto the surface, which makes cleaning difficult. Avoid hot water, as it can coagulate protein, making it harder to remove. Avoid prolonged soaking as it may lead to the formation of biofilm, which will reduce the effectiveness of disinfection.

Clean

Action: Thoroughly clean instruments with warm water and a neutral pH detergent.

- Manual Cleaning: Use a brush while wearing utility gloves to scrub all surfaces, hinges, and serrations. Disassemble multi-part instruments to their simplest components for cleaning.
- Mechanical Cleaning**:** An ultrasonic cleaner is highly recommended to remove fine debris and soil.

Purpose: To physically remove all visible soil, dust, foreign material, and contaminants.

An item that has not been cleaned cannot be effectively disinfected or sterilized.

Rinse and Dry

Action: Rinse instruments thoroughly under warm running water to remove all detergent and debris. Allow instruments to air dry completely before proceeding to disinfection or sterilization. If instruments are dried manually, they are to be dried with a clean lint-free cloth or soft absorbent towel.

Purpose: To remove moisture as it can compromise the packaging for sterilization and dilute disinfectants.

Disinfect or Sterilize

Disinfect

Disinfectants must have a Drug Identification Number (DIN) or Medical Device License (MDL) from Health Canada. Environmental Protection Agency (EPA) and Food and Drug Administration (FDA) approvals from the United States are not approved for use in Canada.

- Select the appropriate level of disinfectant according to the classification of equipment.
- Instruments must be fully immersed in the disinfectant for the required contact time according to the manufacturer's instructions to ensure microorganisms are destroyed.
    - Do not store instruments for longer than the required contact time. Some products are corrosive and can damage equipment. Damaged equipment cannot be effectively disinfected.
- Disinfectant wipes are only permitted for disinfection of non-critical instruments that are constructed in a manner that all surfaces can be disinfected without soaking (no hinges, tubes/lumens, etc.).
- Follow the manufacturer's instructions for use: dilution, contact time, expiry date, personal protective equipment, safety requirements, and storage.
- Do not top up prepared solutions with fresh solutions.
- Ensure bottles are properly labelled if solutions are decanted from original containers.
- Solutions must be used prior to expiry date or reuse claim.

Sterilize

Sterilization is required for all critical instruments and equipment. **Steam sterilization (by autoclave) is the only approved method for sterilization.** Sterilizers must meet the standards established by Health Canada and the Canadian Standards Association (CSA) and be operated according to the manufacturer's instructions.

Monitoring, Storage, and Unacceptable Methods

Monitoring Sterilization

To ensure an autoclave is functioning correctly, it must be monitored and recorded using three parameters:

- Physical/Mechanical Indicators: Checking the time, temperature, and pressure readouts (printout or display) for each cycle.
- Chemical Indicators: Color-changing tape or labels that change color when exposed to sterilizing conditions.
    - Put one class 5 chemical indicator inside every package.
    - If you can't see this indicator from the outside, also put another indicator on the outside.
    - This ensures both internal conditions and overall sterilization are confirmed for safety.
    - Results can be verified by confirming the indicator has changed color or the chemical has moved according to the manufacturer's instructions.
    - Record the results.
- Biological Indicators (Spore Tests): Use viable microorganisms (spores) to provide the most accepted means for monitoring sterilizer efficacy.
    - At minimum, one spore test must be completed monthly.
    - In the event of a positive (failed) spore test, stop using the sterilizer immediately, and all items processed since the last negative test must be re-cleaned, repackaged, and re-sterilized using a properly functioning sterilizer. Contact Environmental Health immediately to notify of the failed test and the corrective actions taken – 902-368-4970 or envhealth@ihis.org.

Storage

Instruments must be stored in a clean, covered container once dried. Sterile items must be stored in a manner that maintains the integrity of the packaging until the point of use.

Unacceptable Methods of Disinfection/Sterilization

Never use the following methods for reprocessing critical or semi-critical instruments, as they cannot guarantee sterility or high-level disinfection:

- Boiling water immersion
- Microwave ovens

- UV irradiation
- Glass-bead sterilizers
- Chemiclave sterilizers
- Domestic pressure cookers
- Dishwashers (even with a sanitizing cycle)

Single-Use items and Documentation Requirements

Single-Use Items

Single-use items (e.g., emery boards, nail/food files, pumice stones, cotton swabs, wax sticks, foam sandals, toe separators, sanding bands, manicure drills, corks) are designed for a single client visit and must be discarded after one use. They must never be reprocessed or reused on another client.

Sharps (needles, blades, razors) are single use and must be discarded in a puncture resistant container, as per local waste disposal requirements

Documentation

PSE operators are required to maintain several records, which include:

- Sterilization Log Sheets: A record of every autoclave run, including the time, temperature, pressure, and the results of the chemical and biological indicators.
- Sterilization Certificates: For pre-sterilized items purchased commercially.
- High-Level Disinfectant Logs: Records of high-level disinfectant use, including the date the solution was mixed, concentration test strip results, and date of disposal.
- Written Procedures: Written, step-by-step procedures for all reprocessing and emergency steps (e.g., sterilization failure backup plan).