





Sharpening Sensory Skills in SP Technicians to Support Quality and Safety

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Editor's note: The January/February 2025 CRCST lesson #200, "Leading the SPD Through Standard & Guideline Changes," was also authored by Anna Castillo-Gutierrez; however, authorship was incorrectly attributed to William Leiva. HSPA regrets this error.

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LEARNING OBJECTIVES

1. Understand why cultivating sensory awareness, beginning with the sense of sight, is vital to quality Sterile Processing outcomes and safety
2. Learn how olfactory and tactile senses are also essential to help technicians identify potential problems with device and processing equipment functionality
3. Explain how to provide training and incorporate sensory awareness into daily workflows to enhance instrument cleaning, sterilization and inspection

The Sterile Processing (SP) discipline is a fascinating balance of science and art. On the surface, it is about strict protocols, advanced tools, and measurable processes; however, most seasoned technicians will share that it goes much deeper. Beyond technical knowledge and standardized procedures, skilled SP technicians rely on something less tangible but equally important—their senses. Sight, smell and touch are vital tools, allowing technicians to detect subtle issues that even the most sophisticated machines might miss.

This lesson addresses how sensory skills are used in SP areas, the specific signs and cues technicians should look for, and how integrating their senses into daily workflows elevates the standard of care. By exploring real-world examples and connecting sensory awareness to both technical expertise and compliance, technicians

can transform a routine task into an essential safeguard for patient safety.

Objective 1: Understand why cultivating sensory awareness, beginning with the sense of sight, is vital to quality Sterile Processing outcomes and safety

The pursuit and development of sensory skills in the SP environment is highly beneficial for safe and successful processing outcomes. From spotting tiny imperfections on an instrument's surface to detecting unusual odors that can signal equipment malfunctions, sensory awareness is a cornerstone of quality assurance in SP environments.

Sight is perhaps the most relied-upon senses in the SP setting. Technicians carefully inspect instruments at every stage of the cleaning, decontamination and sterilization processes to identify anything that could compromise



safety or performance. In certain ways, the visualization process is similar to how a gemologist examines each facet of a gemstone, grading it based on its brilliance and flawlessness; SP technicians must evaluate every instrument with a similar level of precision. *Author's note: In my prior life as a gemologist, I spent years learning to distinguish the qualities of precious metals and stones. I could identify alloys, assess metal qualities, and spot imperfections, often with just a glance. This skill was crucial, as even the smallest blemish or imperfection could diminish the value of a piece.*

SP technicians must be able to look at each instrument and evaluate its surface to identify any flaws, corrosion or residues that could compromise its functionality or sterility. Residual soil or debris, even in small amounts, can jeopardize the cleaning and sterilization process. Technicians must be trained to carefully inspect each instrument for hidden residues, especially in hard-to-reach areas like hinges or lumens.

Again, similarly to how a gemologist categorizes a stone based on its clarity, color and surface integrity, an SP technician must “grade” and qualify each instrument. These devices are not just tools—they are vital to the success of surgeries and to patient safety. Technicians learn to distinguish subtle differences in metal surfaces, alloy compositions, and any minor imperfections that might affect the instrument's performance. This expertise allows them to ensure that every piece meets the highest standards of quality. In addition to looking for soil, they also examine instruments for signs of corrosion or damage, such as rust, cracks or loose parts. Instruments that show signs of wear or damage should be removed from circulation and repaired or replaced to ensure patient

safety. Another visual cue technicians look for is water spots or streaks, which may indicate improper water quality or drying methods. These visual cues are essential for maintaining high standards of cleanliness and ensuring that instruments are safe for patient use.

By training their eyes to identify these issues, technicians can act quickly to address problems. Whether it is detecting rust, cracks, residue or bioburden, the technician's ability to “see” these qualities helps ensure that instruments are clean, sterile and well-functioning. *Note: Although keen sight and visualization capabilities are essential for good SP outcomes, it should not be assumed that sight is the most important sense; applying a combination of senses in SP environment is necessary.*

Objective 2: Learn why olfactory and tactile senses are also essential to help technicians identify potential problems with device and processing equipment functionality

The olfactory sense (smell) also plays an essential role in successful SP outcomes. Smell is not just a sensory experience; it is vital for detecting problems that could otherwise go unnoticed.

Unusual odors can be critical indicators of underlying problems with equipment, the cleaning process or instruments. Technicians must be able to identify and act upon these smells quickly, as they can often signal problems that require immediate attention. For example, the smell or burning paper or plastic should not be considered a normal odor in a Sterile Processing department (SPD); it can signal a malfunction in sterilization equipment, such as an overheating unit or an incompatibility concern between cycles and instruments. If sterilization

equipment becomes too hot, it can damage or cause defects to instruments. Technicians must recognize this odor as a red flag and ensure the issue is addressed promptly to prevent equipment failure or device damage.

Another odor technicians must be aware of is the lingering smell of high-level disinfectant (HLD) or sterilant vapors. These chemicals are powerful and necessary for cleaning instruments; however, inhaling their fumes can be harmful to one's health. Prolonged exposure to chemical vapors can cause respiratory issues and affect the overall safety of the work environment. If technicians smell chemicals, such as HLD or sterilant vapors, it likely indicates that cleaning agents were not properly rinsed or ventilated, leading potentially dangerous chemicals to remain on instruments or released into the air. If chemical odors are present, technicians should immediately notify their supervisor or manager because immediate action is required.

Residual odors (such as from blood, stool or other bodily fluid or organic material) from instruments that underwent cleaning indicates that the cleaning process was insufficient. Even the smallest trace of organic material remaining on an instrument can compromise its sterility and cause cross-contamination during surgery. It is essential for technicians working in all areas of the department to recognize these types of odors and address them, as any such odor signals that the instrument needs to be reprocessed.

Additionally, musty smells coming from a cart washer or washer-disinfector can signal an issue with the equipment. If moisture is trapped in the cart washer due to a malfunctioning sump pump or improper drainage, for example, it can create a damp environment that promotes mold and bacterial growth.



Musty odors can also indicate that instruments were not fully dried after the cleaning cycle. Trapped moisture, if not addressed, can compromise sterilization and jeopardize patient safety. Technicians need to be alert to these odors and investigate the cause to ensure all washing and drying cycles are functioning correctly and that equipment is thoroughly cleaned and maintained. Recognizing and acting upon odors when they are detected can prevent bigger issues down the line—allowing necessary corrections to be made and technicians to maintain a high level of quality and safety.

The tactile sense (touch) is also critical for ensuring quality and safety in SP environments. In addition to visualization and smell, technicians use their hands to ensure an instrument meets cleanliness and functionality standards. A greasy or tacky feeling on an instrument, for example, is a clear indicator that it hasn't been properly cleaned and may have tape or adhesive residue. When instruments feel rough or gritty, it might indicate surface damage or corrosion, which might otherwise have been missed during visual inspection. ANSI/AAMI ST79:2017/(R)2022, *Comprehensive guide to steam sterilization and sterility assurance in health care facilities*, recognizes the importance of touch as an essential part of instrument testing. While devices, such as lighted magnification tools and insulation testers, are commonly used to inspect instruments for cleanliness and integrity, tactile sensation should not be overlooked. It is vital that technicians include physical handling as part of their inspection process.

Additionally, temperature plays an important role in SP areas. After automated cleaning, instruments should not be handled until they feel cool or tepid to the touch. Handling

instruments or trays that are hot or excessively warm could result in unintentional burns. Touch helps technicians assess whether instruments are ready for assembly.

Objective 3: Explain how to provide training and incorporate sensory awareness into daily workflows to enhance instrument cleaning, sterilization and inspection

Skilled SP technicians combine visual, olfactory and tactile sensations and observations to build a more complete picture of instrument readiness. For example, a technician might notice a faint discoloration (sight) and an unusual odor (smell), leading them to investigate further and discover that a cleaning agent wasn't rinsed properly. They might feel a greasy residue (touch) on an instrument that appears clean, prompting the need for recleaning. These sensory cues, when combined with technical expertise, allow technicians to detect problems early—before they can compromise safety or performance—and integrate their sensory findings into a holistic approach to quality control.

To fully leverage sensory awareness, SPDs should actively incorporate sensory-based skills into daily workflows. Visual inspections should be a mandatory part of the cleaning and sterilization process, for example. Technicians should be trained to look for common visual cues, like residual soil or corrosion, at all key stages of processing, not just in the preparation and packaging (Prep & Pack) area. Smell checks should also become a routine part of the workflow, with technicians reporting any unusual odors and taking action accordingly. In addition to visual and olfactory checks, the importance of tactile assessments should be stressed.

Staff should be trained to feel for residues, texture changes, and dampness before instruments are packed or stored. Making sensory checks an official part of the workflow leads to error reduction and improve quality. Sensory awareness should be integrated into every stage of instrument processing, from initial cleaning to final inspection, to ensure that each instrument meets the highest quality standards.

Possessing and developing strong sensory skills is not automatic. Instead, they are developed and enhanced through experience and training. New technicians can benefit from hands-on practice where they are taught what to look for, smell for and feel for when processing and handling instruments and operating equipment.

Pairing new staff members with seasoned technicians who can explain, share and demonstrate their sensory insights is an effective way to accelerate learning. Mentorship provides an opportunity for newer technicians to develop their sensory skills under the guidance of experts. By incorporating sensory awareness into training, departments can help all technicians develop the skills they need to excel in the department and across their various roles.

Conclusion

Effective SP processes and practices do not occur only by following procedures and using advanced tools—a combination of technical precision and the application of human senses and intuition are also vital. Sight, smell, and touch are critical tools that seasoned technicians must use to bridge the gap between science and art in the discipline.

Developing sensory awareness in the SPD provides an added layer of quality control and helps prevent errors before



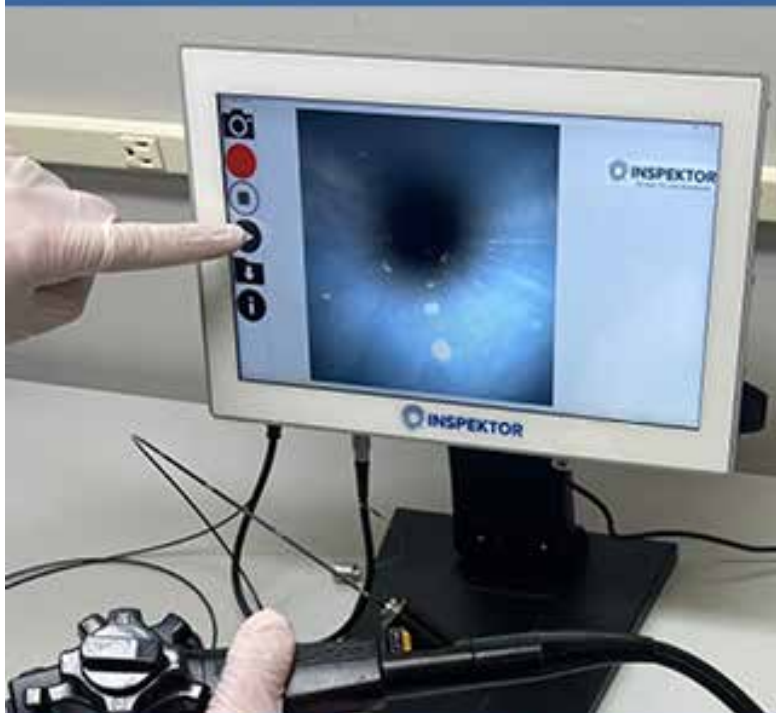
they impact patient care. As technology continues to evolve, these sensory skills will remain essential, ensuring that no detail is missed and that patient safety remains the top priority. With experience and dedication, every technician can more acutely develop their senses to elevate the standard of care in their department. **P**

RESOURCES

Association for the Advancement of Medical Instrumentation (AAMI). ANSI/AAMI ST79/ (R)2022 *Comprehensive guide to steam sterilization and sterility assurance in health care facilities*.

HSPA. "Sterile Processing Technical Manual," ninth edition. 2023. Chapter 8, pp. 113–122; Chapter 12, pp. 195–196; Chapter 14.

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CRCST Self-Study Lesson Plan Quiz: Sharpening Sensory Skills in SP Technicians to Support Quality and Safety

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1. Sensory awareness:
 - a. Is a cornerstone of quality assurance in Sterile Processing environments
 - b. Is not essential in Sterile Processing if technicians are certified
 - c. Should not be an expectation until a technician has at least one year of experience
 - d. Should be a hiring requirement
2. Which sense is most important for Sterile Processing (SP) technicians to develop and apply?
 - a. Sight
 - b. Sound
 - c. Touch
 - d. A combination of the senses is needed
3. Which is a key benefit of having keen sight in the Sterile Processing department?
 - a. It prevents all unclean or malfunctioning devices from being delivered for patient use
 - b. It helps technicians detect corrosion, damage, residue or bioburden
 - c. It allows technicians to quickly determine correct detergent dosing, sometimes without the need to measure
 - d. It is a sign of a potential departmental leader or mentor
4. What can a musty odor coming from a cart washer indicate?
 - a. A corroded drain
 - b. Improper drying or sump pump problems
 - c. Overuse of cleaning chemicals
 - d. An overheated spray component
5. The sense of touch can help technicians assess whether instruments are ready for assembly.
 - a. True
 - b. False
6. What can a faint discoloration on an instrument indicate?
 - a. Excessive drying time
 - b. Improper cleaning or corrosion
 - c. Improper heating of the sterilizer
 - d. Normal wear and tear of the device
7. What is the primary risk of residual organic odors coming from instruments?
 - a. Potential damage to surgical tools
 - b. Malfunctioning sterilization equipment from debris clogging components
 - c. Cross-contamination and compromised sterility
 - d. The need for increased drying time
8. Which standard emphasizes the importance of tactile sensation (touch) in instrument inspection?
 - a. ANSI/AAMI ST91
 - b. ANSI/AAMI ST108
 - c. ANSI/AAMI ST79
 - d. ANSI/AAMI ST72
9. Despite the importance of sensory awareness, technicians should rely primarily on technology to detect issues during instrument inspection.
 - a. True
 - b. False
10. If a lingering smell of high-level disinfectant or sterilant occurs:
 - a. It is a normal part of Sterile Processing and not typically a cause for concern
 - b. It is almost always caused by an obvious spill
 - c. The SPD must be shut down to investigate the cause
 - d. It likely indicates that cleaning agents were not properly rinsed or ventilated
11. In the SPD, technicians' senses are developed through:
 - a. Experience and hands-on training
 - b. Certification
 - c. Mentoring sessions with SP and Operating Room staff
 - d. All the above
12. Unusual odors:
 - a. Are almost always present when handling instruments
 - b. Are usually caused by strong cleaning chemistries
 - c. Are not concerning unless visible debris is present
 - d. None of the above
13. Using touch when inspecting instruments:
 - a. Is only important in the absence of lighted magnification
 - b. Can replace the use of lighted magnification
 - c. Should not replace the use of lighted magnification
 - d. Is most important for inexperienced technicians who may have missed defects during visual inspection
14. Smelling burned paper or plastic in the SPD:
 - a. Can signal malfunctioning sterilization equipment
 - b. Usually indicates a breakdown of instrument metal
 - c. Often signifies that an instrument load was insufficiently cleaned
 - d. Usually means the sterilizer printer is jammed
15. Which is an effective way to accelerate technician learning and develop their senses?
 - a. Have the new technician observe a surgical procedure
 - b. Require certification within six months of an employee's hire date
 - c. Pair new employees with seasoned technicians who can explain, share and demonstrate their sensory insights
 - d. Ensure new technicians receive one-on-one time with the educator

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