

SCOPE CLEANING AND REPAIR

Top Ten Ways to Keep Scopes Happy

By Kathy Dix

When it comes to scope cleaning, there are some practices that are just plain wrong. And yet, these practices persist—those responsible for scope reprocessing continue to make the same errors when cleaning, disinfecting, and repairing endoscopes.

We spoke to manufacturers, repair experts, and educators to find out exactly what not to do. We asked our experts to present their suggestions in “top ten” format, to make it easier to share the information with your colleagues.

Top Ten Recommendations

“Here are a few tips for avoiding scope damage that can lead to fluid invasion,” says Garces.

Handling

- Protect the scope at all times.
- Avoid coiling insertion tubes too tightly.
- Avoid stacking scopes with accessories or other scopes during transport.
- Use care when handling scopes around sharp objects and metal surfaces.

Setup

- Check compatibility and working condition.
- Examine condition and size-compatibility of accessories to avoid damaging channels.
- Inspect and test scopes prior to each procedure to catch damage early on.
- Regularly check caps, pistons and visible seals for wear and tear to ensure the scope is watertight.

Endoscopy Procedure

- Follow original equipment manufacturer’s (OEM’s) operating instructions.
- Take care when picking up the instrument or putting it down.
- Avoid exerting too much force on buttons, switches, angulation cables or the control grip during use to help prevent punctures, cracks and buckling.
- Inspect each EndoTherapy device before inserting it into the channel. Stop when you encounter a restriction, and don’t attempt to advance the device while the scope is angulated.
- Make sure the device is in the field of view before opening or engaging; good communication between nurse and physician is critical.

Reprocessing

- Train, train, train.
- Avoid stacking a scope on its own distal tip.
- Do not reprocess scopes together unless using a reprocessing machine specifically designed for reprocessing two scopes in a single basin.
- Check sinks, drains and countertops for sharp edges; remove unnecessary objects nearby.
- Ensure reprocessing staff has adequate reprocessing time.
- Always follow all four reprocessing steps:

1. Bedside Cleaning

Check integrity of the water-resistant cap and make sure it is dry. Put the cap on before cleaning at bedside. Clean at bedside before bioburden hardens to avoid the need for aggressive cleaning later.

2. Leak Testing

Leak test before manual cleaning. Use a sink large enough to avoid crimping the instrument. Post the appropriate OEM leak testing instructions.

3. Manual Cleaning

Avoid undue chemical damage by adhering to OEM instructions for reprocessing time/temperature/concentrations using recommended detergents and sterilants. Follow the detergent manufacturer’s instructions to ensure the proper detergent concentrations. Use appropriate cleaning brushes that are in good working condition.

4. High-Level Disinfection (HLD) or Sterilization

Follow the scope manufacturer’s approved protocols for high-level disinfection or sterilization. Follow the manufacturer’s instructions for use of AERs or sterilants. Use only endoscope-compatible liquid chemical germicides recommended by the scope manufacturer that have been tested for proper potencies.

Storage

- Protect scopes when they aren’t in use.
- Store scopes in a clean, ventilated and uncluttered cabinet (not in the carrying case).
- Hang scopes vertically with valves and caps removed and with locks in the “free” position.

Preventive Maintenance

- Fix minor damage quickly before it escalates.
- Regularly check endoscopic equipment and accessories for wear.
- Ensure scopes are repaired to OEM specifications.
- Retire outdated equipment and keep active scope inventory levels on par with patient volumes.
- Keep appropriate staff trained on handling, operating and reprocessing protocols.

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Top Ten Recommendations

Boulet's top ten recommendations for proper scope cleaning are as follows:

1. "ALWAYS leak test and ALWAYS inflate endoscope prior to submersion to prevent fluid invasion and cross-contamination.
2. ALWAYS dilute detergent according to manufacturer's directions for use to ensure proper detergent concentration and reaction with debris.
3. ALWAYS use fresh detergent and/or sponge for each endoscope being cleaned to ensure reaction with debris and prevent cross-contamination.
4. ALWAYS use the same water-resistant cap that passed the leak test procedure for cleaning the endoscope, to prevent fluid invasion and cross-contamination.
5. Perform bedside cleaning with detergent diluted to manufacturer's specifications to decrease the potential of biofilm.
6. ALWAYS manually clean the endoscope prior to disinfection to remove microbial burden and debris from an endoscope.
7. Brush all accessible channels using a brush compatible with the channel size to ensure debris is being dislodged.
8. After brushing, flush all channels (including special channels) with manufacturer's cleaning adapters and detergent solution to remove loosened debris.
9. Rinse endoscope and all channels (including special channels) to remove residual debris and detergent.
10. Stay educated on endoscope reprocessing by attending seminars and reading articles."

"These are our top ten recommendations," offers Alex Vrancich, vice president/general manager at Spectrum Surgical Instruments Corp.

1. "Clean the scope as soon as possible following the procedure.
2. AORN recommendations on endoscope cleaning should be required reading for all personnel responsible for cleaning scopes.
3. Cleaning solutions are corrosive and harmful to scope components, so overexposure must be avoided.
4. Minimize the number of individuals handling the scope.
5. Minimize the distance between where the scope is used and where the scope is cleaned. Provide proper containers to transport the scopes (both soiled and clean containers).
6. A fresh, single-use cleaning brush is best.
7. Adequate scope inventory will reduce reprocessing stress and minimize mistakes and accidents.
8. Leak test (before and after use, after processing and before storage)
9. Install water cap.
10. Educate, train, repeat (especially during staff turnover, vacation, or when using temporary help)."

"These are our top recommendations for proper scope cleaning," Purtell suggests.

1. "Always leak test the scope properly.
2. Be sure to completely brush and flush channels.
3. Clean all gross debris from the exterior of scope as well as in channels.
4. Always follow the guidelines of both the scope manufacturer as well as the cleaning apparatus manufacturer.
5. Be sure to hang the scope in a well-ventilated area after cleaning/disinfecting.
6. Clean all the valves properly."

"These are our recommendations for proper scope cleaning," says Basile.

1. "Thoroughly preclean at bedside.
2. Be sure all scopes begin the reprocessing process within 30 minutes of use.
3. If a scope goes longer than 30 minutes without reprocessing, develop a special set of procedures for more thoroughly cleaning these scopes, and adopt a method for verifying their proper cleaning.
4. Clean all channels of the scope, not just the biopsy and suction channels. Other channels, including the alternate water channel, can be exposed to contaminants, even if they are not used during a procedure.
5. Adopt a feedback loop to ensure reprocessing. There are commercially available tests and methods that can be employed to periodically check scopes to see if they have been thoroughly cleaned.
6. Be sure to review and have at ready access the reprocessing instructions from the scope manufacturer, the detergent manufacturer and the AER manufacturer.
7. Each and every member of the team needs to be thoroughly trained and their competency tested on each and every piece of equipment. This should be done at least once per year per employee and every time a new piece of equipment (scope, AER, etc.) is brought in for use.
8. If the facility does not have one, consider purchase of an AER.
9. If a full-blown AER is too expensive or not practical, consider purchase of one of the mechanical flushing aids (e.g., Scope Buddy, Endo-Flush)
10. Develop a partnership with your suppliers — of scopes, of scope repair, of detergent and of cleaning equipment."

SCOPE CLEANING AND REPAIR

Top Ten Things Not to Do

“These are the top ten things people should NOT do when cleaning and repairing scopes,” says Pam Boulet, RN, BSN, CGRN, a clinical specialist at Medivators (a Minntech Corporation).

“They should NOT:

1. NOT leak test endoscopes.
2. Submerge the endoscope in water, then apply leak tester.
3. Leak test the endoscope with one water-resistant cap, then prior to manual cleaning, replace with another water-resistant cap.
4. Use the same detergent and/or sponge in the sink/container for more than one scope or, worse yet, all day.
5. Pump an arbitrary amount of detergent in the rinse water.
6. NOT brush the channels.
7. NOT flush the channels.
8. Carry the contaminated endoscope from the procedure room to the reprocessing room not enclosed in a container.
9. NOT wear personal protection when cleaning endoscopes (i.e., gloves, gowns, face protection)
10. Clean an endoscope if not properly trained.”

“These are the things people should remember when cleaning scopes,” says Rob Purtell, director of business development for Mobile Instrument Service & Repair.

1. “Do not forget to put the soak cap on a scope that requires one, before immersing in fluid.
2. Do not forget to leak test the scope.
3. Do not leave gross debris inside scope channels.
4. Do not leave the scope immersed in disinfectant for longer than the recommended time.”

“These are the top things people should NOT do when cleaning and repairing scopes,” says Ralph Basile, vice president of Healthmark.

1. “Fail to preclean scope at bedside. The longer proteins and other residual soils are allowed to dry, the more difficult they will be to clean from the scope, inside and out. Rinsing away gross contaminants immediately after use is key to proper reprocessing of scopes.
2. Failure to clean the scope within 30 minutes of use. Sooner is better. But scopes allowed to sit for over 30 minutes without reprocessing beginning are at very high risk for developing difficult-to-clean denatured proteins. Denatured protein is the beginning of biofilm and may permanently render a scope impossible to clean.
3. [Allow] improper training of personnel performing reprocessing. New people need to be properly trained and have their competency tested. The same goes when a new piece of equipment arrives — staff needs to be thoroughly trained on proper reprocessing of the new scope.
4. Thinking that the automatic endoscope reprocessor (AER) replaces the cleaning stage. Only in the last few months has a piece of equipment come on the market that is meant to replace manual cleaning. But all other automated equipment still requires thorough cleaning prior to placing in the AER.”

“The majority of improper endoscope reprocessing occurs during the manual cleaning stage. Common reprocessing deficiencies are seen in the steps below,” says Eddie Garces, vice president of the Olympus Medical Repair Group.

1. Pre-Cleaning
 - Failure to reprocess unique channels (example: elevator wire or auxiliary water channel)
 - Not using the proper adapter to reprocess the air/water channels
 - Transporting the endoscope without using a closed container or with sharp accessories
2. Leak Testing
 - Inefficient examination of the water-resistant cap for damage
 - Overlooking pressurization of the scope prior to immersion
 - Failure to fully angulate the distal tip during leak test
 - Not following the manufacturer’s guidelines for reprocessing a damaged scope
3. Manual Cleaning
 - Neglecting to dilute the detergent according to manufacturers’ specifications
 - Reuse of disposable brushes and other accessories
 - Failure to use manufacturer’s recommended cleaning adapters
 - Use of damaged or improperly reprocessed cleaning adapters
 - Using a sink or basin of insufficient dimensions
4. High-level Disinfectant
 - Inadequately testing the minimum effective concentration of high-level disinfectant according to manufacturer’s instructions (i.e., every cycle)
 - Failure to maintain a log of high-level disinfectant use and endoscope reprocessing
5. Storage
 - Oversight in removing all valves and caps when storing the endoscope
 - Neglecting to ensure that scopes are hung with all locks in the free position
 - Crowded and unsecured scope storage areas

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The Strangest Things

"These are the strangest things I address in the field," says Boulet. "The biggest issue is, how do they reprocess their endoscope with a known leak, before sending out for repair? I was mortified to learn that most people place the contaminated endoscope into the suitcase and just send it off. No red bag, no biohazard sticker, nothing! I always recommend, from an infection control standpoint, that they get with their repair company to address this issue. Also, some of the craziest things I have seen in the field are:

1. The tech submerging an endoscope in a sink of water, then applying the leak tester.
2. Not leak testing at all.
3. Using the same sink of detergent all day. Do they really think anything is left in the detergent for it to work?
4. Flushing then brushing the channels.
5. Processing the endoscopes in the procedure room when they had a beautiful reprocessing room with three sinks!
6. The tech walks out of the procedure room with a contaminated endoscope in a gloved hand, with no gown or face protection on.
7. The tech sometimes uses one pump of detergent to a sink of water; another time, five to six pumps are used.
8. They had one water-resistant cap that stayed on the leak tester and was used for each scope's leak test. After each scope was tested, the cap was removed and replaced with another cap."

"These are the strangest things we've seen done to the scopes sent for repair," offers Purtell.

1. "A distal end completely crushed like it was put in a vice.
2. A scope that was run over by a forklift while in a box at the loading dock — the control body was crushed.
3. We once found a Q-tip left inside a scope from another repair company."

"One of the most concerning things we see is the exposure of a scope to disinfectants such as glutaraldehyde without thorough cleaning," says Basile. "Chemicals such as glutaraldehyde (and others) cross-link proteins, creating biofilm that is a source of contamination and a host to microbiological agents." 🦠

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