Cleaning Guidelines for Scisense Catheters

Due to their size, it is sometimes easy to forget that Transonic Scisense Catheters are highly technical and sensitive pieces of equipment. Proper movement of the pressure sensing window is essential. We recommend that you carefully examine your catheters when you receive them to get acquainted with their layout and store them in their supplied boxes when they are not in use. Abuse of the catheter due to mishandling or cleaning neglect will result in inaccurate measurements and reduced life span. The practice catheters included with each shipment are an excellent resource to help you become more familiar with proper handling and cleaning techniques.

- Always clean catheters immediately after each insertion.
- Use only approved products listed in Section 3; ultrasonic cleaners, alternative enzymatic cleaners or other products may damage catheters and void warranty
- Use this guide in conjunction with our "Optimizing Catheter Life Span" guide to ensure proper catheter handling.

1. Daily Cleaning and Care Guide

For all catheter cleaning applications, we recommend Endozime® AW Plus, a PH neutral enzymatic cleaning solution used to remove all traces of biological material. See Section 3 of this guide for more information about this product.

DAILY CLEANING GUIDE

Immediately after every insertion in blood, catheters should be cleaned. A 5-10ml syringe with the needle removed can be filled with pre-mixed Endozime® and the catheter inserted retrograde into the solution for convenient cleaning (Fig. 1). Be sure to submerge all parts of the catheter that were in contact with biological material. A soak of 30-90 minutes is normally sufficient but will depend on the amount of material on the catheter.

Fig. 1: Catheter in syringe with cleaner

Using Figures 2 & 3 as a guide, view the catheter under a microscope, if the catheter appears to remain soiled, soak the catheter further in Endozime® solution.

Helpful Tip: When multiple catheterizations are being performed throughout the day, carefully wipe with wet gauze any large contamination and place catheter in Endozime® between insertions. This step prevents tissue from drying onto the catheter that can affect measurement – the length of time for this soak is less relevant. Before reinsertion, fully rinse cleaner from the catheter as described below and ensure that no contamination remains through visual inspection.

Fig. 2: Clean 1.2F Pressure-Volume Catheters

Fig. 3: Clean 1.9F Pressure-Volume Catheters

CATHETER RINSE

Catheters cannot be stored with cleaning agent on them, therefore a thorough rinse of the catheter is important. Using distilled water, carefully rinse catheter for 30 seconds either in a large basin moving slowly back and forth or under a gentle flow of distilled water. Ensure that the entire cleaned area is rinsed. Avoid fluid contact with the catheter's HDMI connection or strain relief.

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Cleaning Guidelines for Catheters Cont.

DRYING AND STORAGE

Carefully dry the entire catheter length using soft, lint-free gauze taking extreme care around the pressure sensor on the distal end of the catheter. The pressure sensor should always be visible during the drying process to avoid accidental force being applied to it (Fig 4 & 5).

Perform a final inspection of the catheter, preferably under a microscope, to ensure no contaminants remain. If contaminates are found, repeat cleaning process above. The catheter can now be stored in original packaging. Ensure that the sensing portion of the catheter is centered in the circular cut out of the foam to avoid undue stress on the membrane (Fig. 6).

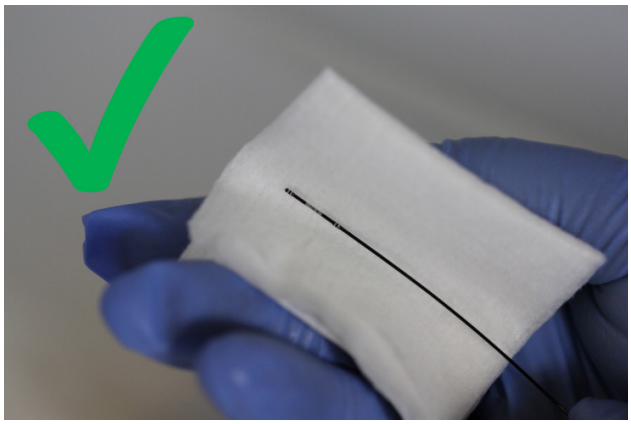

Fig. 4: Proper drying technique

Fig. 5: Improper drying technique

2. Disinfection Guide

Before disinfection, the catheter must be cleaned and dried as described above in Section 1.

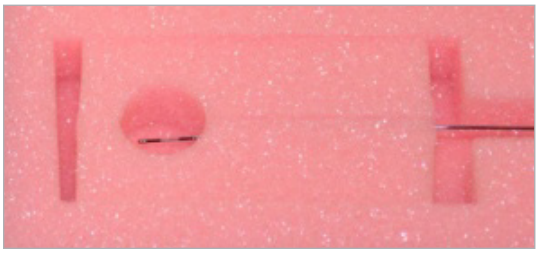

Fig. 6: Proper storage of catheter tip

- We suggest using CIDEX® OPA for disinfection, prepared in accordance with manufacturer's suggestion. See section 3 for specific product information.
- Submerge the catheter length to strain relief, being careful not to allow the fluid to make contact with the HDMI electrical contacts. Follow the manufacturer's prescribed submersion and temperature suggestions.
- Disinfectants will attach strongly to the catheter body, and therefore must be thoroughly rinsed before use. We suggest 2-3 minutes of rinsing and flushing with fresh and moving sterile solution (water or saline). Do not reuse flushed fluid and dispose of all fluids in a safe manner.

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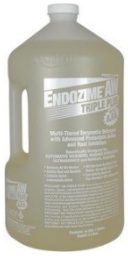
Cleaning Guidelines for Catheters Cont.

3. Recommended Products



Suggested Enzymatic Cleaning Agent:

- Endozime® AW Plus - Multi-Tiered Enzymatic Detergent
  Endozime® AW Plus is a unique low-sudsing and pH neutral formulation of enzymes that gently removes blood, fat, carbohydrates, starches and proteins. We suggest the unscented version with no perfume and no dye (Item #34516). Ordering information can be found at:
  https://www.ruhof.com/products/endozime-aw-plus?variant=1089952219150

Suggested Disinfecting Agent:

- CIDEX® OPA – Ortho-Phthalaldehyde Solution
  CIDEX® OPA Solution provides a broad-spectrum activity against bacteria, mycobacteria, viruses and fungi. More information can be found at:
  https://www.emea.aspjj.com/products/manual-solutions/cidex-opa-solution

Alternative Enzymatic Cleaning Agent:

- Tergazyme® - Enzyme-Active Powdered Detergent
  Whenever possible, use our suggested cleaning agent, Endozime. In the event that you do not have Endozime available in the lab, Tergazyme can be used if the directions are strictly followed – especially the rinsing protocol. Tergazyme includes a protease enzyme that removes proteinaceous soils, tissue, blood and body fluids. More information, including directions for use, can be found at:
  https://alconox.com/resources/standarddocuments/tb/techbull_tergazyme.pdf

4. Returning Your Catheter for Assessment

If your Transonic Scisense Catheter requires service, please contact us for return documentation. All catheters must be cleaned and disinfected before shipping to an authorized Transonic Scisense office for assessment. See sections 1 and 2 for cleaning guidance. Catheters that arrive with blood or tissue constitute a bio-hazard to our staff, therefore they will not be assessed, and the catheter will be returned to you at your expense.

For more information regarding service needs for your catheters or other equipment, please contact your local Transonic Scisense office, distributor or research sales representative for further guidance and assistance.

Our Transonic Scisense office can be reached at:

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