

70% alcohol, forced air: Why?

Question: "After cycle completion, how long can an instrument be safely stored in a sealed liquid 'sterilizing' processor (that is, what is the instrument's 'shelf life')?"



✓ The Association of Operating Room Nurses (AORN) recommends that instruments processed in a sealed liquid 'sterilizing' processor be removed and "used immediately" after cycle completion (see reference 1, below).

I am confused. *As long as any liquid processor, labeled as a 'sterilizer,' remains sealed after cycle completion, why can't the instrument be safely stored in it overnight? Isn't storing a processed endoscope in a sealed sterilizer the same as storing a wrapped surgical instrument on a shelf after processing it in the Sterile Processing Department? (Clearly, there is a difference, but what is it?) Isn't the sterility of the instrument compromised only after the sterilizer's seal is broken (or its lid or door opened) or the integrity of the instrument's wrap violated (i.e., event-related sterility)?*

Among other reasons, AORN may make this recommendation¹ because 0.2 micron bacterial filters do not produce sterile water from a hospital's tap water supply. Therefore, AORN's recommendation is quite prudent, since overnight storage of wet instruments in any sealed container (or processor) provides an environment favorable to the colonization of opportunistic waterborne microorganisms in the instrument's moist, unventilated internal channels.

To be sure, published reports demonstrate that microorganisms have remained in tap water filtered through a 0.2 micron bacterial filter.³ If waterborne microorganisms, such as pseudomonas, were to recontaminate the endoscope during the final water rinse and then proliferate in its wet internal channels during overnight storage, a potentially serious infection risk could exist, as has been well documented during ERCP procedures.

To facilitate drying and prevent bacterial colonization during storage, the following is recommended: Remove the instrument from the processor immediately after the cycle's completion, and then flush each of the instrument's internal channels with 70% alcohol, followed by forced air. These two terminal steps are recommended whether using a tap or 0.2 micron filtered water rinse after chemical immersion.

References

1. O'Neale M. Clinical Issues. *AORN J* May 1997;65(5):980.
2. Smith CD. Clinical Issues. *AORN J* June 1994;59(6):1313-14.
3. Phillips et al. *J Hosp Infect* 1995 Oct;31(2):152-154.

Critical readership feedback

I recently received the following two E-mail 'letters' via the Internet. Each criticizes my recommendation to flush the endoscope's internal channels with 70% alcohol, followed by forced air drying, prior to instrument storage, when using a final 0.2 micron filtered water rinse:

- ➔ "For the record, I consider (Dr. Muscarella's) information to be at best misleading, and in some instances blatantly false."
- ➔ "I have read all of your stuff, and find that your arguments are misleading and biased, as you fail to even consider another perspective than your own. If I were to "rinse" any of my endoscopes in alcohol and blow them dry, they would not be sterile, for sure. I want sterilized instrumentation, not terminally disinfected instruments for my operating room."

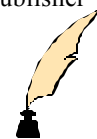
My response: I appreciate your candor and am sorry that you both feel this way. Indeed, I try to always be impartial and present other viewpoints and perspectives. I make all attempts to present logical and scientifically sound conclusions based on the peer-reviewed, published studies referenced in each issue of this newsletter. ☺

Thank you for reading this newsletter. *I have addressed the above issues to the best of my ability. Respectfully, the*
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