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Immediate-Use Steam Sterilization

"Immediate-use steam sterilization (IUSS): Process designed for the cleaning, steam sterilization, and delivery of patient care items for immediate use. Previously known as flash sterilization."[2]

Biological Indicator Testing of IUSS Cycles

- Biological indicators (BIs) within process challenge devices (PCDs) should be used at least weekly, but preferably every day the sterilizer is used. Additionally, BIs within PCDs should be used to monitor every load containing implants.[1,2]
- "A representative of the same type of tray to be routinely processed through by immediate-use steam sterilization should be selected to serve as the PCD (BI challenge test tray). Each type of tray configuration in routine use for IUSS should be tested separately. One or more BIs and one or more CIs should be placed in the empty tray configuration to be tested."[2] Note: There are no commercially available BI PCDs for IUSS so you must make your own representative BI PCD or challenge test tray.
- The BI test for IUSS cycles is conducted in an otherwise empty sterilizer. Place the BI PCD in the most difficult-to-sterilize area of the chamber, which is normally on the bottom shelf over the drain.[2]
- Monitoring with a BI in every load ensures that all sterilization cycles and trays being used are tested routinely, and assists with the rapid detection of problems in the event of a sterilization process failure.

Recommended Practices for Monitoring of IUSS Sterilization

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- "Immediate use steam sterilization (IUSS) should be kept to a minimum and should be used only in selected clinical situations and in a controlled manner."[1]
- "A class 5 chemical integrating indicator or a class 6 indicator should be used within each sterilization container or tray used for IUSS. Class 6 indicators are cycle-specific and should be used only in the specific cycles for which they are labeled."[1]
- "Items subjected to IUSS are used immediately and not stored for later use or held from one procedure to another."[1]
- "Immediate use steam sterilization should not be used for implantable devices except in cases of defined emergency when no other option is available."[1]
- "When IUSS of an implant is unavoidable, cycle selection should be determined by the manufacturer's written instructions for use, and a biological indicator and a class 5 chemical integrating indicator should be run with the load."[1]

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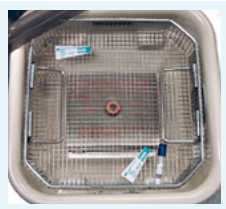
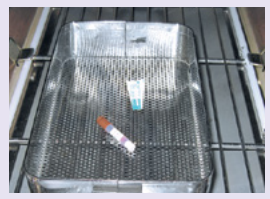
- "Every sterilization load containing implants should be monitored with a PCD containing a BI (a BI challenge testpack). A Class 5 integrating CI should be included in this PCD. Implants should be quarantined until the results of the BI testing are available (CDC, 2008)."[2]
- "In a documented medical emergency, when an implant must be released before the BI result is known, the Class 5 CI included in the BI PCD provides additional information about the critical parameters of the sterilization process."[2]
- "Implantables should not be sterilized for immediate use (CDC, 2008)."[2]

Gravity Displacement

Tray Configuration	Temp	Time	Appropriate Monitors
 Mesh Bottom Perforated Surgical Tray	132°C (270°F)	≥3 minutes (metal instruments only) ≥10 minutes (if lumens or porous items)	 3M™ Attest™ Rapid Readout Biological Indicator 1291 + 3M™ Comply™ SteriGage™ Steam Chemical Integrator 1243 
 Rigid Sterilization Container, Instrument Case/Cassette, Organizing Tray	132°C (270°F)	Follow Containment Device Manufacturer's instructions	
 Representative Tray Configuration	132°C (270°F)	3 or 10 minutes	 3M™ Attest™ Super Rapid Readout Biological Indicator 1491 + 3M™ Comply™ SteriGage™ Steam Chemical Integrator 1243 
	135°C (275°F)	3 or 10 minutes	

Dynamic-Air-Removal (e.g., prevacuum)

Tray Configuration	Temp	Time	Appropriate Monitors
 Mesh Bottom Perforated Surgical Tray	132°C (270°F)	≥3 minutes at 132°C (270°F) (metal instruments only) ≥4 minutes at 132°C (270°F) (if lumens or porous items)	 3M™ Attest™ Rapid Readout Biological Indicator 1292 + 3M™ Comply™ SteriGage™ Steam Chemical Integrator 1243 
 Rigid Sterilization Container, Instrument Case/Cassette, Organizing Tray	132°C (270°F)	Follow Containment Device Manufacturer's instructions	
 Representative Tray Configuration	132°C (270°F)	4 minutes	 3M™ Attest™ Super Rapid Readout Biological Indicator 1492V + 3M™ Comply™ SteriGage™ Steam Chemical Integrator 1243 
	135°C (275°F)	3 minutes	

BI test is conducted without instruments.[2]

≥ This symbol means greater than or equal to.

Contact your 3M Infection Prevention Division Representative at **1-800-228-3957** or **www.3M.com/sterilization**

1. 2016 AORN Guidelines for Perioperative Practices. Guideline for Sterilization.
2. ANSI/AAMI ST79 A1:2010 & A2:2011 & A3:2012 & A4:2013, Comprehensive guide to steam sterilization and sterility assurance in health care facilities.

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