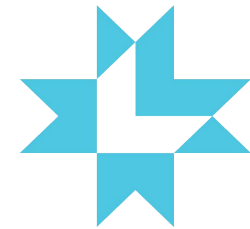


# LLCHD Body Art Practitioner Seminar



Lincoln-Lancaster County  
Health Department

## Sterilization



# Today's Topics

- Sterilization
- Body Art Code Requirement
- Testing
- Storage

# Sterilization - definition

LMC 8.08

Sterile shall mean free of live bacteria or other microorganisms including highly resistant bacterial endospores.

## Jewelry Used In:

- **New** Body Piercing must be with Jewelry sterilized in an Autoclave.
- **Healed** body piercing does not have to be sterilized but must be used according to the product label.

# Sterilization Basics - Heat

- Kills by denaturing microbial proteins and nucleic acids
- Damaged the outer membrane of cells

# Killer Terms

- **Thermal death point** is the lowest temperature at which a single species of microorganism can be heat killed in ten minutes.
- **Thermal death time** is the time required. at a given temperature, for the heat killing of a single species of microorganism in suspension.

# More Killer Terms

- "D" value is the time required to kill 90% of the viable cells or spores of a given microorganism at a given temperature, usually quoted in minutes.

## “Yeah, but it’s a dry heat...”

- Dry heat sterilization takes longer than steam
- Dry heat allows live organisms time to sporulate
- Spores can survive the dry heat cycle if it is too short
- Currently, City code requires an autoclave (pressure/steam)



# Steam Sterilization Advantages

- Moist heat kills faster than dry heat at the same temperature because –

*steam transfers heat faster than dry air*

# 3 Key Autoclave Elements

- Heat
- Steam (moisture)
- Pressure

# Autoclaves

- Autoclave shall mean a sterilization device which meets the standards of American Society for Mechanical Engineering (ASME).

# Body Art Code Requirement

- All non-disposable instruments used for body art shall be cleansed and sterilized after each use.



# Body Art Code Requirement

- Autoclaves must be operated according to manufacturer recommendations



# Sterilization Principles

- Decontamination
- Sterilization
- Storage & Use

# Decontamination

- Items to be sterilized should be thoroughly cleaned and dried in accordance with recommended practices.



# Decontamination Process Steps

- Attire
- Transport
- Sorting
- Soaking
- Washing
- Inspection



# Attire

- Gloves
- Protective clothing
- Safety glasses



# Transport

- Avoid spills
- Use covered totes



# Sorting

- Starts in the procedure area
- Remove infectious wastes from non-infectious wastes
- Separate reusables from disposables

# Soaking

- Necessary with dried or caked blood on difficult to clean equipment
- Ultrasonic cleaning



# Washing

- Detergents
- Removal of all visible contaminants
- Clean rinse

# Inspection

- Cleanliness
- Sharp piercing edges
- Chipping
- Worn spots
- Sharp edges in wrong areas
- Functionality

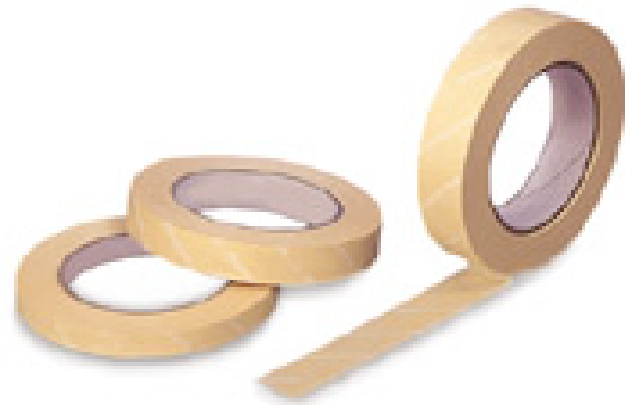
# Preparation and Packaging

- Prepare and package items so that sterility can be achieved and maintained until used.
- Expiration date not to exceed 90 days



# Process Indicators

- External Indicators:  
Masking tape with chemically treated strips that turn colors after the sterilization process is used as the external indicator.





# Autoclave Loading

- Follow manufacturer's instructions
- Leave “breathing room” between items
- Don't overload

# Autoclave Sterilization

- 250 degrees F
- 15 minutes
- 15 lbs. pressure

# Autoclave Unloading

- Crack, Cool, and Dry
- Personal Hygiene
- Hand protection
- Check external indicators
- Failures -use new indicators and run again
- If it fails again do not use until repaired

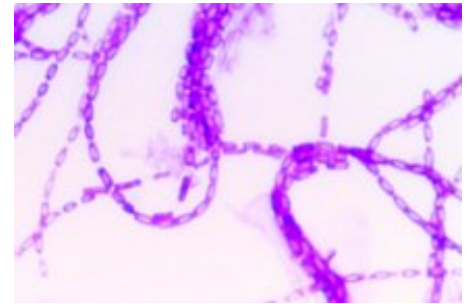
# Chemical Indicators

- Internal chemical indicator strips placed inside packaged item or load to be sterilized.



# Biological Indicator (BI) Testing

- Biological ampule or filter paper strip with 1 million bacterial spores of *Bacillus stearothermophilus* or *B. subtilis*



# Autoclave BI Testing

## Biological Indicator:

- Store in cool dry location
- Placed in center of load
- Run during normal load or empty run

# Autoclave BI Testing

## Biological Indicator:

- When the sterilizer cycle is complete, the sterilizer door is opened and the test pack is removed returned to lab in mailer.
- Strips are aseptically transferred to growth medium and then incubator at 56°C.
- Test strips are examined at regular intervals (e.g. 8, 12, 18, 24 and 48 hours) for any color change.

# Autoclave (BI) Testing

## Interpretation of Results

- Appearance of a yellow color (a positive readout) indicates bacterial growth.
- No color change indicates an adequate sterilization cycle.
- Record results.



# Autoclave Testing

## Spore testing:

- Act on any positive test as soon as the first evidence of growth is noted.
- A final determination of sterility can be made after 48 hours of incubation.
- When examining the processed (test) biological indicator at regular intervals, the control biological indicator is also checked.

# Autoclave Records

- Spore test results should be kept in a clinic notebook or autoclave log.
- Time and date procedure was performed with the signature of person performing the test and reading the test are to be entered into the autoclave log.

# Autoclave Use

## Use of Controls:

- As a positive growth control, a non-sterilized biological indicator is incubated each time a biological test is performed.
- The control must be of the same lot and manufacturing date as the test biological indicators used that day.

# Autoclave Records

Frequency of Testing:

- Biological testing must be done on each autoclave at least once every 30 days.



# Autoclave Records

Incubating your own BI's


- Spore Ampules



# Autoclave Records

## Biological Indicators

- Lab mailers
- Independent laboratory requirement

<i>Sterilization Assurance Program</i>				
Experience The Beauty Jason Berezuk C - 729 Corydon Avenue Winnipeg MB R3M 0W4		Sterilization Unit Autoclave Model M7-001 Serial # MH001206 Other Information Contact Person J. Berezuk 204 453-4786		
Reference #	<b>65989</b>	Location of Test Strips in Sterilizer		
Tests Submitted	8 (M-08)	Test Strip #1	Sterile	t/b
Supplier		Test Strip #2	Sterile	b/f
Date Tested	2000 05 03	Control Strip	Non-sterile	
Date Incubated	2000 05 15	Incubation 1°C	56	
Date Reviewed	2000 05 23	Test Organism	<i>Bacillus stearothermophilus</i>	
<b>Conclusions</b>				
<b>Passed.</b> No growth observed with test strips after 7 days incubation.				

# Autoclave Failures

- Chemical indicators don't change
- Positive BI tests results
- Rerun previous load with new indicators
- Remove from service until repaired and two consecutive negative BI tests are achieved

# Autoclave maintenance

- Always sterilize clean equipment
- Use distilled water only
- Follow manufacturer's guidance for cleaning and maintenance.
- Document in logs