

Sterilization (hygiene)

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-----> *'Sterilization' is a set of measures that kill all viable micro-organisms in a given environment, including disputes and helminths, and also irreversible virus inactivation.*

Pre-sterilization preparation

- Decontamination or disinfection,
- mechanical cleaning,
- rinsing drinking water or distilled water,
- drying,
- packing.

Physical sterilization

Damp heat sterilization

- In steam appliances, which must be equipped with a regularly changing antibacterial filter, with some exceptions,
- sterilization of objects made of metal, glass, porcelain, ceramics, textiles, rubber, plastics, medicinal products and other materials resistant to parameters,
- a temperature of *134 & nbsp; ° C* for 60 minutes is used to inactivate prions,
- for some unpackaged items intended for immediate use, the temperature is used *'134 & nbsp; ° C* for 4 minutes, it is not used in central sterilization and sterilization centers,
- for medicinal products, parameters are used individually according to standard operating and technological procedures.

Hot air sterilization

- In devices with forced air circulation,
- sterilization of objects made of metal, glass, porcelain, ceramics, earthenware and medicinal products at parameters,
- for medicinal products, parameters are used individually according to standard operating and technological procedures.

Plasma sterilization

- It is formed in a high-frequency electromagnetic field or high-voltage discharge, which in a high vacuum acts on hydrogen peroxide vapors or other chemicals to release oxygen free radicals; the effect is given by a low-temperature gas plasma (hydrogen peroxide, peracetic acid) at a temperature of *'50' 'and other specified parameters.*

Chemical sterilization

- Material that cannot be sterilized by physical means,
- sterilization medium is gases of prescribed composition and concentration.

Sterilization with formaldehyde

- Effect of gaseous mixture formaldehyde with steam at a temperature of 60-80 ° C and a vacuum at the parameters specified by the manufacturer,
- aeration of the chamber at the end of the cycle takes place through an antibacterial filter.

Ethylene oxide sterilization

- Gaseous mixture ethylene oxide at *'37-55 ° C at parameters specified by the manufacturer.'*

Principles of sterilization

- We choose sterilization methods according to the recommendations of the manufacturer of individual instruments / aids / objects,
- tools / aids / objects are sterilized thoroughly washed and dried,
- the materials are placed in suitable containers and stored in the sterilization chamber in such a way as to allow the sterilization medium to penetrate as easily as possible,
- packages with sterilized material are *'marked with a' 'date of sterilization, expiration, worker code (responsible for package integrity) and process test check,'*
- each sterilization cycle is *'documented:'* date, type of sterilized material, name and signature of the person who performed the sterilization,
- sterilized material in the packaging is *'transported'* in closed crates so as to protect them from damage and contamination,
- *'sterilized material is stored:'*
 - loose with a short expiration time,
 - protected in a closed cabinet, drawer or other packaging with a longer expiration date,
 - for long-term expiration, a double package is used, which after sterilization is inserted into a closable storage package (eg cabinets),
 - for better handling of sterile material during its use, it is possible in exceptional cases to use feeding tongs, which are stored "dry" in the quiver, when the change of feeders and quivers must be performed at least once every 8 hours.

Checking the effectiveness of sterilizers

Biological indicators

- New devices, repaired devices before commissioning,
- in case of any doubt about sterilization efficiency,
- **regular inspection:**
 - *Once a month: sterilizers in sterilization centers, central sterilizations, operating theaters, operating tracts or workplaces that perform sterilization for other workplaces,*
 - *for sterilizers not older than 10 years at the latest after 200 sterilization cycles, but at least once a year,*
 - *for sterilizers older than 10 years at the latest after 100 sterilization cycles, but at least twice a year.*

Non-biological tests (monitoring of sterilization parameters by the operator)

- *'Process chemical test:'*
 - each unit package is marked,
 - serves to distinguish material ready for sterilization and already sterilized, responds by color change only to the presence of sterilization medium,
- *'chemical tests:'* designed to demonstrate compliance with all cycle parameters; they are inserted in places where the sterilization medium penetrates the worst.

Links

Related Articles

- Antisepsis
- Asepsis
- Disinfection
- Sterilization (Dentistry)

External links

- Sterilization (microbiology)