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STERILIZATION

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Introduction:

STERILIZATION is an important and problematic step that should be considered as early as possible in the design of any new medical device intended for use in contact with sterile tissues , mucous membranes or breached skin its eliminates all forms of microbial life and is carried out in health-care facilities by physical or chemical methods , the goal of sterilization is to kill all microorganisms spores , virus and fungi .

IMPORTANCE OF STERILIZATION

- 1- Reducing the risk of contamination on surgical apparatus .*
- 2- Minimizing the growth of organisms on culture medium .*
- 3- Controlling infection by killing germs .*

Methods of sterilization



Physical agents:

- **Dry heat :**
- 1- hot air oven
- 2- flaming
- **Moist heat :**
- 1-steam under pressure
- 2-pasteurization
- 3- boiling
- **Non thermal :**
- 1- radiation
- 2-filtration

Chemical agents :

- 1- Alcohol
- 2- Aldehydes
- 3- Phenolic compounds
- 4- Iodine
- 5- Hydrogen peroxide
- 6- Chlorine
- 7- Halogens

Chemical agents



Iodine :
Halogenation
of genetic
material
**Useful for
surgeries**



Chlorine:
Oxidizes the
bacteria and
forms free
radicals



**Hydrogen
peroxide :**
Oxidizes the
bacteria and
forms free
radicals .



Alcohols:
Kills
most
bacteria
viruses

Physical agents

Moist heat

Autoclave : is a machine that uses steam under pressure to kill harmful bacteria , viruses , fungi , spores , on items that are placed inside a pressure vessel



Dry heat

Hot air ovens : an electrical devices which use dry heat to sterilize , It developed by Pasteur .



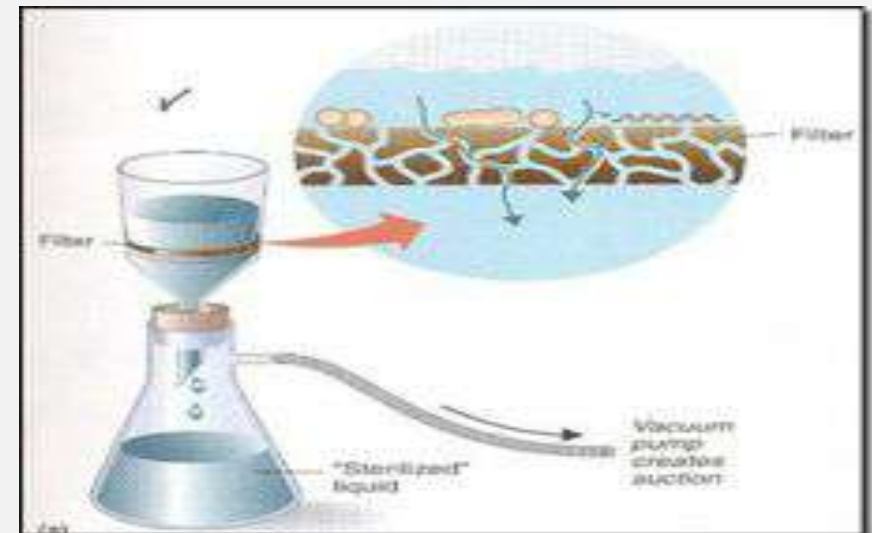
Radiation:

Gamma radiation : is the most popular form of radiation sterilization



Filtration:

Seitz filter : a bacteria filter made of asbestos , used to sterilized solutions without using heat



Puerperal fever

Agnats
Simmelweis





Summary

- **Sterilization and disinfectant guidelines must be followed to prevent exposure to infection .**
- **Proper handling of packs after sterilization is important.**
- **Stuff should keep in mind that contaminated instruments present risk to the sample as well as the users .**



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THANK YOU!

