

Al- Mustaqbal University College

First stage.  
Department of Optometry(Optics)



جامعة المستقبل الاهلي  
مرحلة الاولى  
قسم التقنيات البصرية

## Control of microbial growth

Lab : 7

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## Terminology of Microbial Control

### Sterilization:

- The complete destruction or removal of **all** viable organisms, except bacteria endospores, from an environment.
- Autoclave or high energy ionizing radiation (x ray, gamma)

### Sanitization:

- Reduction of microbial population to **a safe level**.
- Soaps

### Disinfection:

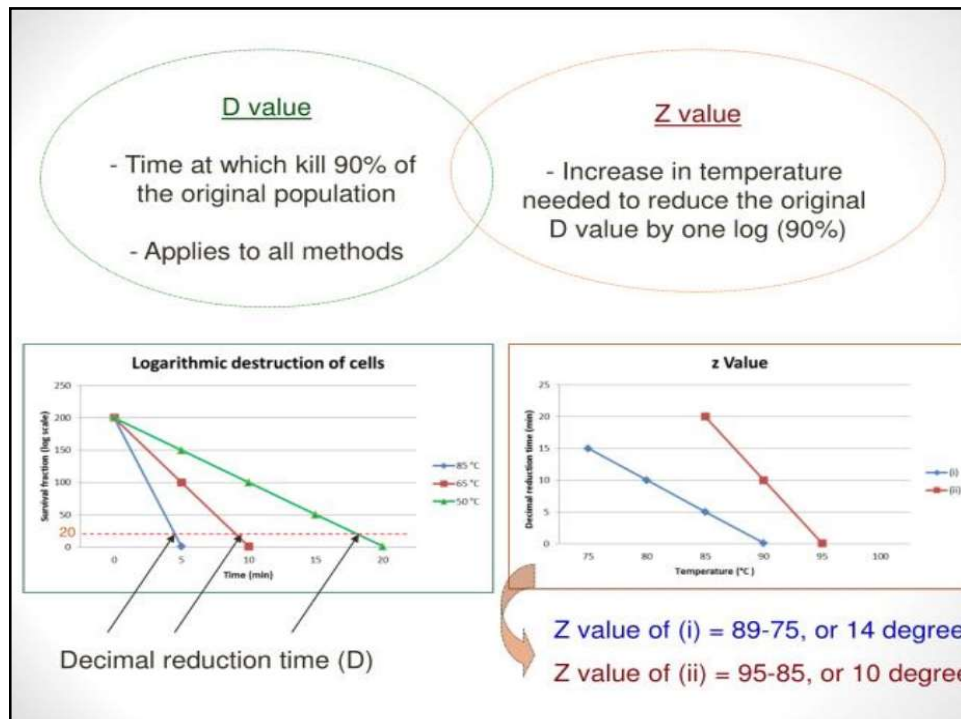
- Killing, inhibition, or removal of viable microorganisms from inanimate objects.
- Phenolics, boiling water, UV irradiation

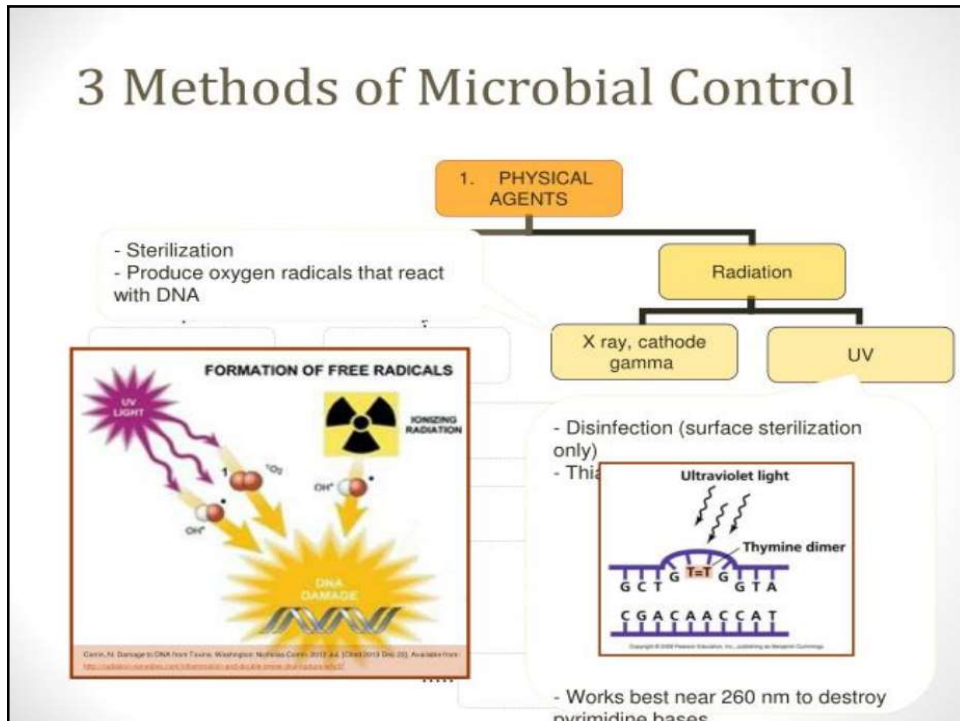
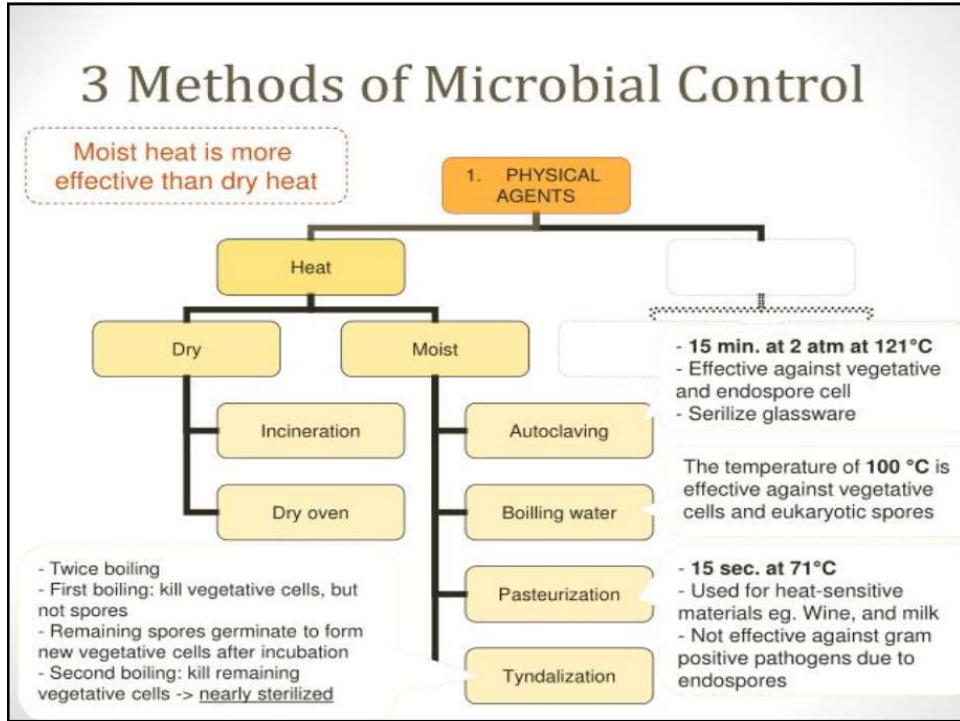
### Antisepsis:

- Prevention of infection of host tissue.
- Iodine, ethanol

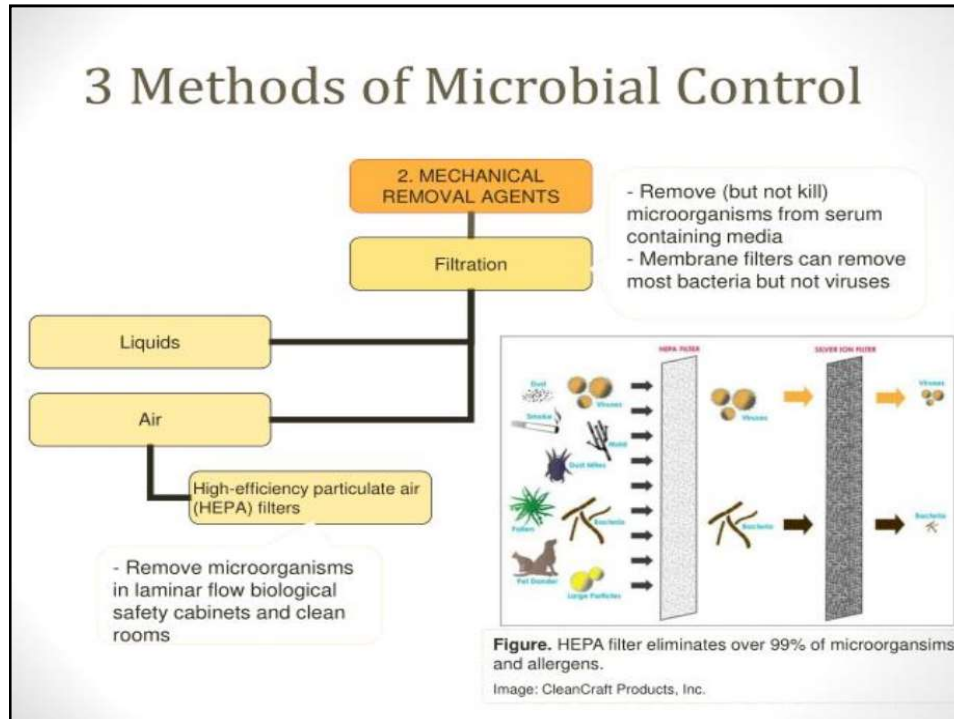
## 6 Factors that Affect Antimicrobial Activities

1. **Population size:**
  - larger populations require longer time to kill
2. **Population composition:**
  - different microorganisms have different range of sensitivity to antimicrobial agents
  - G- bacteria vs. G+ bacteria
3. **Concentration of antimicrobial agent:**
  - higher concentrations of agents have greater efficient in killing microorganisms
4. **Exposure (time):**
  - longer exposure lead more organisms get kill
5. **Temperature:**
  - Higher temperature usually increases effectiveness in killing
6. **Environment:**
  - Environmental factors play an important role in affecting effectiveness of antimicrobial agents
  - pH, humidity, concentration of organic matter





## 3 Methods of Microbial Control



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