



**Lecture title: Decontamination and Waste Disposal**

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*Summary: Decontamination and  
Waste Disposal*

**Outlines**

- 1. Definitions.**
  - 2. Main considerations.**
  - 3. Factors affecting Decontamination/Sterilization.**
  - 4. Autoclave**
  - 5. Personal Protective Equipment (PPE)**
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- **Sterilization:** Thermal, chemical, or radiological processes for destroying microbial life
  - **Disinfection:** To inactivate / removal of disease causing organisms from living parts.
  - **Decontamination:** To make surfaces safe to use
  - **Cleaning:** Water and detergents to remove



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**particulates/spills/soil/etc**

## **1- Definitions**

## **2- Main considerations**

- **Hazardous waste: all waste requiring special treatment**
  - Can be biological, toxic, radioactive, etc
- **Biomedical waste: waste from human/animal care or research facilities**
  1. **Microbiology waste: cell cultures, stocks, viruses**
  2. **Sharps waste: needles, syringes, blades, broken glass**
  3. **Human blood and body fluids: all human bodily fluids**
  4. **Animal waste: tissue, organs, carcasses, bedding, bodily fluids.**

## **3- Factors affecting Decontamination/Sterilization**

- **Contact time**
  - Long enough to kill/inactivate organisms
- **Organisms targeted**
  - Varying in survival time



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- **Surface chemistry**
    - **Avoid damaging equipment and surfaces**
  - **Safety**
    - **Available PPE**

#### **4- Autoclave**

- **Thermal decontamination**
  - **Heat from high-pressure steam**
  - **Can be used to sterilize**
- **Factors affecting efficacy**
  - 1. Time**
  - 2. Temperature**
  - 3. Pressure**
  - 4. Contact with steam**

#### **Personal Protective Equipment (PPE)**

**The most common types of PPE that protect you from biological hazards include:**

- 1. Latex gloves.**

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- 2. Proper mask for biosafety.**
  - 3. Eye protection.**
  - 4. Face shield.**
  - 5. Apron and special full body safety clothes.**
  - 6. Shoe cover and boots.**