Department of biology

((Microbiology))

stage 2

First lecture

Safety measures in the microbiology laboratory

By

Msc. Zahraa Jawad Kadhim

Department of biology

Main Rules

- Act responsibly & be careful, so everyone Is Responsible !
- Food, drink, smoke and gum are not allowed in the microbiology lab .
- Follow instructions .
- Clean up carefully and thoroughly .
- Wear correct clothing & safety equipment .
- Wear gloves, aprons or lab coats when working with corrosive or staining chemicals. goggles is optional and tie hair back .
- Never wear open shoes or sandals when using sharp instruments or hazardous chemicals .
- Do not handle organisms without approval and supervision of your instructor .
- Wash hands thoroughly with soap and water after any activity involving animals and/or animal parts, plants and/or plant parts, soil, and other organic material .
- Notify supervisor immediately of any accidents or unsafe conditions in the microbiology lab !
- Don’t use your Mobile, Medical devices, Chemicals and Writing With gloves
- Always follow the teacher’s directions and only do lab work when a teacher is present. You MUST get permission from the teacher before beginning ANY activity or using any tools.

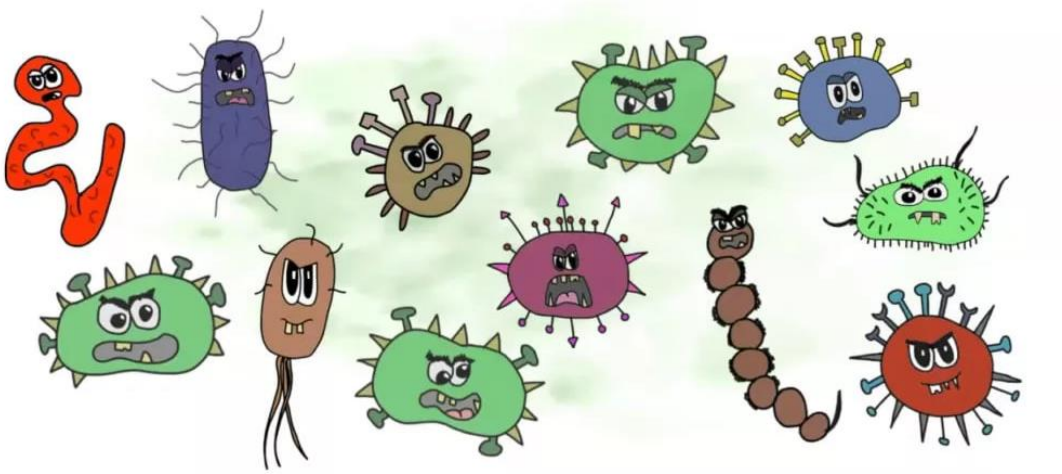
Safety Precautions:

Medical laboratories work with a great number of pathological specimens, as well as various bodily fluids, including blood. Because of this and because of the risk of cross-contamination, great attention must be paid to maintaining an antiseptic environment. You will need to sterilize your equipment regularly.

Biohazards include:

bacteria, viruses, fungi, parasites, or any human body fluids.

- **Pathogens:** agents that cause disease.
- **Bloodborne Pathogens:** microorganisms that may be transmitted through direct contact with contaminated blood, bodily fluids, or tissues. Treat all human blood & bodily fluids as if they are infected.



What are the hazards?

1- The pathogenicity of an organisms

2- Toxicity: Toxicity means poisoning.

3- Allergenicity: Allergenicity is a non-toxic, immune system mediated, undesired reaction of the body to a substance or agent.

4- Disturbance of ecological balances: Disturbance of an ecological balance may happen when a GMO possessing a certain characteristic is accidentally spread to the environment, or when genetic material originating from that organism spreads to other organisms in the environment.

5- Other harmful effects: Sometimes there are other unwanted effects that urge one to be even more cautious when handling biological material. It is not possible to give an exhaustive list of these effects.

Biological waste: Biological waste must be disposed of an important distinction should be made between biological waste that has been inactivated before disposal, and biological waste that has not been inactivated before disposal. The latter has to be treated as hazardous medical waste and should be transported to an incinerator that is suited for the incineration of hazardous medical waste.

Biological waste includes:

• All genetically modified and/or pathogenic biological material: cell cultures, cultures of Microorganisms, tissues, blood, etc.

• Typical laboratory waste of organic origin: gels, etc.

• All kinds of biologically contaminated material: gloves, paper tissues, disposable culture flasks, pipettes, etc.

• Materials that are not necessarily contaminated, but cannot be thrown into an ordinary waste disposal bag because they have sharp edges or look dirty (bones, blood, etc.).