**Introduction to Microbiology**

**Safety rules in the lab:**

1. Always wear lab coat and gloves inside the lab.
2. Cover any minor cuts on your body.
3. Never eat, drink or smoke in the lab.
4. Never mouth-pipette.
5. Report any accident to your supervisor.
6. Never take any culture out of the lab.
7. Always wash your hands before leaving the lab.

**Microbiology:** Study of small organisms.

Ex. Bacteria, viruses, fungi and parasites.

Found in: Air, soil, water and in our bodies

**Name and function of common items used in the lab:**

* Burner: To provide area almost free of organism.

1. Bunsen burner: use flame.
2. Bacti burner: it's electrical.

* Loops: To transfer organism from one place to another (from culture to the slide).

1. Wire loop: large amount.
2. Straight loop: small amount.

The loops are made up of special material called (Nichrome). It heats and get cool rapidly.

* Slide: To place the organism on top of it to examine it under the microscope.

1. Plain slide.
2. Frosted end slide.

* Cover slip: Used to cover the stained slide to protect it from scratching and save it for a long time.
* Pipettes: Used to transfer solution from one place to another.

1. Graduated pipette: to transfer specific amount of solution.

Use **Bi-pump** with it.

1. Pasteur pipette: to transfer non specific amount of solution.

* Container: Use it to collect sample from the patient.

It should be sterile.

1. Universal container: 25 ml. Use to collect large amount of sample, like: urine, sputum.
2. Bijou bottle: 5ml. Use to collect small amount of sample, like: CFS, gland fluid.

* Petri dish: Use it to put media inside it for culturing.

It should be sterile.

* Disinfectant jar: Use it for the disposal of some used items, e.g. Slides, cover slips, pipettes.
* Disinfectant: it is a chemical substance that kills or inhibits the growth of micro organisms.
* Incubator:

Incubator is a warm cabinet that you can set its temperature to a proper temperature for bacteria growth. About 37º C is a good temperature for most bacteria. This is close to the body temperature.

* Autoclave: Use for sterilization. Its cycle (121ºC, under 15 atm pressure for 15-20 min).
* Autoclave bag: Made of material that tolerates high temperature.
* What is saline?

It is 0.9% Nacl in H2O = 0.9 g of Nacl dissolved in 100 ml water.

* Its function: Keeps the intact morphology of the cell of the bacteria by regulating the osmotic pressure.

**Disposal of used items:**

1. Trash bag: for non infectious material. (Tissues, covering plastic).
2. Disinfectant jar.
3. Autoclave: for contaminated glass wears and flasks, which are reusable items.
4. Autoclave bag: for plastic items (Petri dish, container) which are disposable.