**Aseptic Technique**

* It's a **set of strict procedures** used to eliminate pathogens and prevent contamination.
* Essential in labs to keep your bacteria cultures pure and avoid messing up your results.
* You’ll need it **whenever you're handling bacteria** — during culturing, plating, staining, or transferring samples.

**Basic Rules to Follow:**

* Work near a flame (Bunsen burner or alcohol lamp) to create a sterile field.
* Always sterilize tools (loops, pipettes) before and after use.
* Don’t touch sterile areas or tools with your bare hands.
* Use gloves, tie your hair, clean your workspace with alcohol.

**Sterilization vs. Aseptic vs. Clean**

| **Term** | **What it Means** | **When We Care** |
| --- | --- | --- |
| **Clean** | Reduced germs, not sterile | Not good enough for lab or medical use |
| **Aseptic** | Eliminates pathogens, prevents contamination | Use this in **all microbiology work** |
| **Sterile** | Completely free of all microorganisms | Refers to **instruments & environment** (like your agar plates or tools) |

**Sterilization Process**

* Medical tools are sterilized using **steam (autoclave)**, **ethylene oxide**, or **plasma**.
* They test these processes using **biological indicators** (like spores) to make sure it actually kills bacteria.
* Clean first → sterilize → handle only with aseptic technique.

**Storage & Handling of Sterile Items**

* Sterile items stay sterile **until something happens** (e.g., the packaging tears, gets wet, etc.).
* Use the **event-related shelf life** rule — not based on time but on **package integrity**.
* Once a sterile item gets wet or damaged — it’s **no longer sterile**.