Specimens Collection

Specimens for bacteriological investigation should be forwarded as a sterile containers. Specimens should be collected during the acute phase of illness, and before antibiotics are administered. Each container must have the name of patient and from whom the specimens is submitted.

1- ***Material*** :- saliva, sputum (rinse or gargle with water before collection), urine (clean –voided midstream sample is collected), faeces, can be collected directly into sterile containers or screw cap. Blood culture(Prepare the skin for vein puncture by cleansing it with 70-95% alcohol and 2% tincture of iodine , about 5-10 ml of blood is drawn by vein puncture and transferred to blood culture bottle containing 5ml of broth culture.

2- ***Washing***:- with physiological slain like throat washing and bronchial washing for patients cannot produce sputum.

3- ***Aspiration***:- Abscess, pustule, ulcer ,wound pus, peritoneal and soon as possible to the laboratory containers. Each container must as possible to the laboratory, in pleural fluid can be collected by aspiration from lesions by a sterilized syringe and needle.

4- ***Swabs***: swab is a cotton- wool or synthetic fiber mounted on a thin wire or stick. The swabs either touched or rubbed on the surface of infection and kept in a sterile container. It is suitable for taking specimens from the sites having mucous membrane such as nose throat, eye, ear, oral mucosa ,wound, ulcer and other lesions.

5- ***Biopsies***: organ tissue collect in the same way of aspiration , the surgeon is advised to obtain several small tissue samples and any purulent exudates.

The important points of specimens collection

Valid interpretation of the results of culture can be achieved only if the specimen obtained is appropriate for processing. As a result, care must be taken to collect only those specimens that may yield pathogens, rather than colonizing flora or contaminants. Specific rules for the collection of material vary, depending upon the source of the specimen, but several general principles apply:-

1- Right selection of specimen such as sputum not saliva for staining with acid fast stain for T.B. detection and select mid-stream urine to cultivation where infected with urinary tract infection (UTI).

2- Specimens should be taken before treatment is given.

3- Rapid transmission to the lab. to avoid drying some times using transport media.

4- To activation and increasing of microorganism numbers the specimen may addition to broth media like (blood of patient injected directly in broth bottle). or to sodium citrate solution. Like (pleural fluid).

5- Label of the request form showing the name , age , sex of patient and date of collection should be adhesive with container.

Inoculation Techniques

To transfer the microorganisms from medium to another by process called (sub culturing) ,all transfers must take place under aseptic condition as following :-

1-From plate to broth:

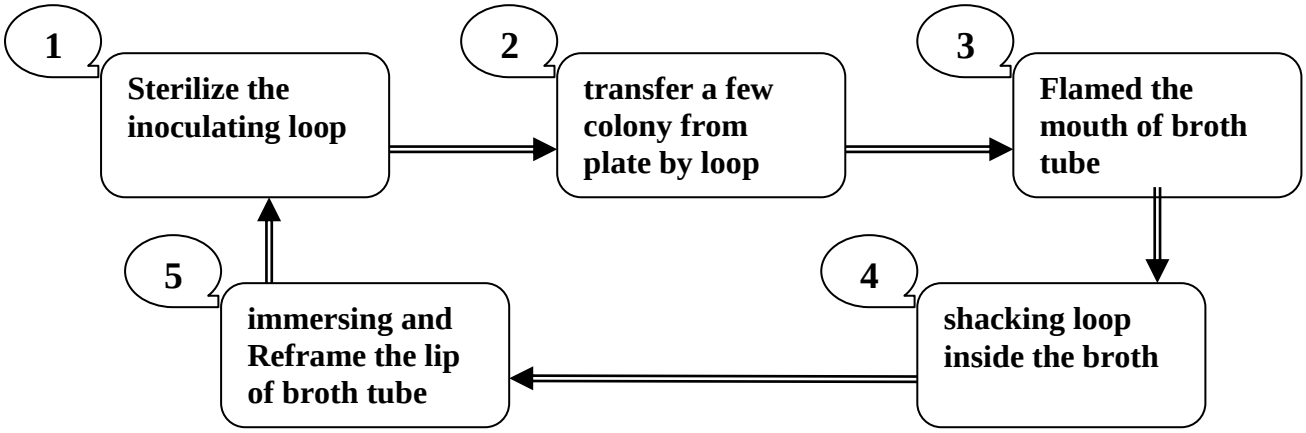
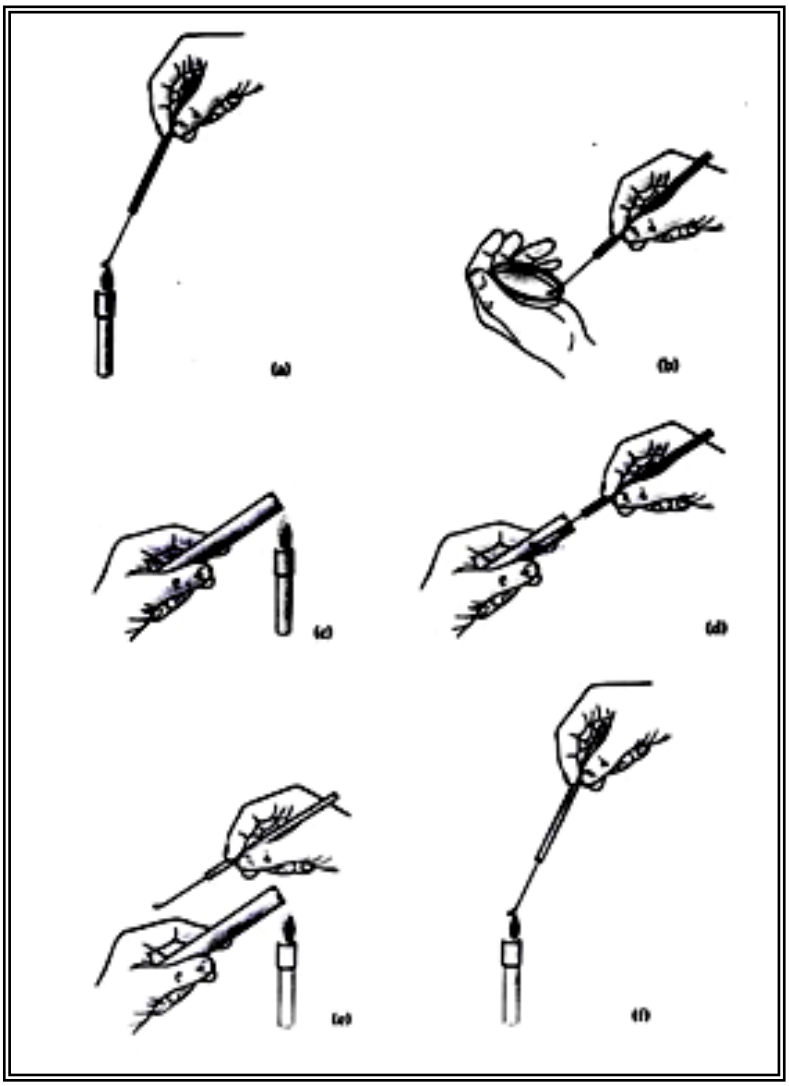


Figure 1: inoculation in broth



2- From plate to slant agar: (***Stroke culture***)

Repeat steps (1,2,3) above fashion over the surface of slant → **touched the bottom of slant by loop in straight line or in zigzag** → **Repeat (5,1)**

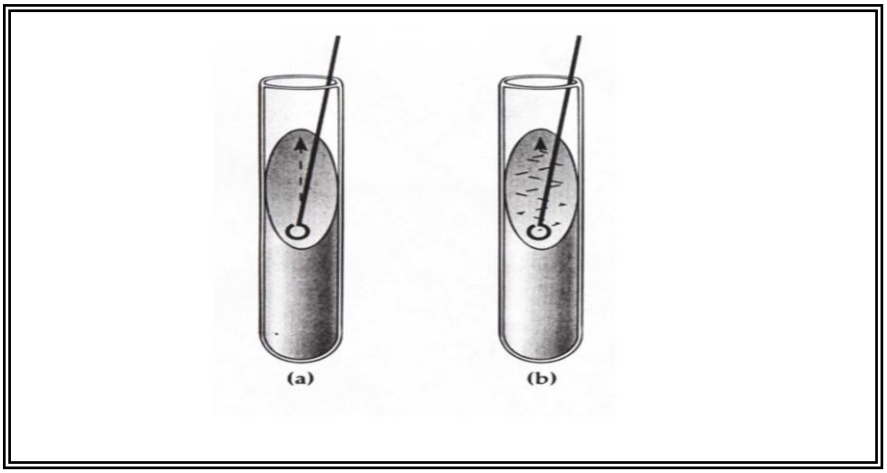


Figure2: inoculation in slant agar

3- Stab culture

by needle the growth (inoculums) stabbed or immersed in the agar tube media for demonstration of gelatin liquefaction and for the maintenance of the stock culture.

4- Lawn culture:

Lawn culture are prepared by flooding the surface of the plate with a liquid culture or suspension of bacteria and pipetting off the excess inoculum or by applying a swab soaked in the bacterial culture or suspension . After incubation, lawn culture provides a uniform surface growth. It is useful for antibiotic susceptibility testing by disc diffusion method and bacteriophage typing.

5- Streak – plate technique (streaking method)

The most common methods of inoculating an agar plate .

– A small amount of growth is placed on the side of the agar plate

(either with swab or a drop by inculcating loop).

- A sterile loop by flame and cool it by touching the agar and spread the bacteria by moving the loop from side to side, entering the initial site of inoculation.

- Repeat the sterilize and cool the loop, streak at a 90 angle to the first streaks.
- Moving around the agar plate and repeat streak 2-3 times .

After incubation the streaks plate in (37 °C) for (18-48)hr. a single colony (isolated colony) is getting by streaking (figure 3).

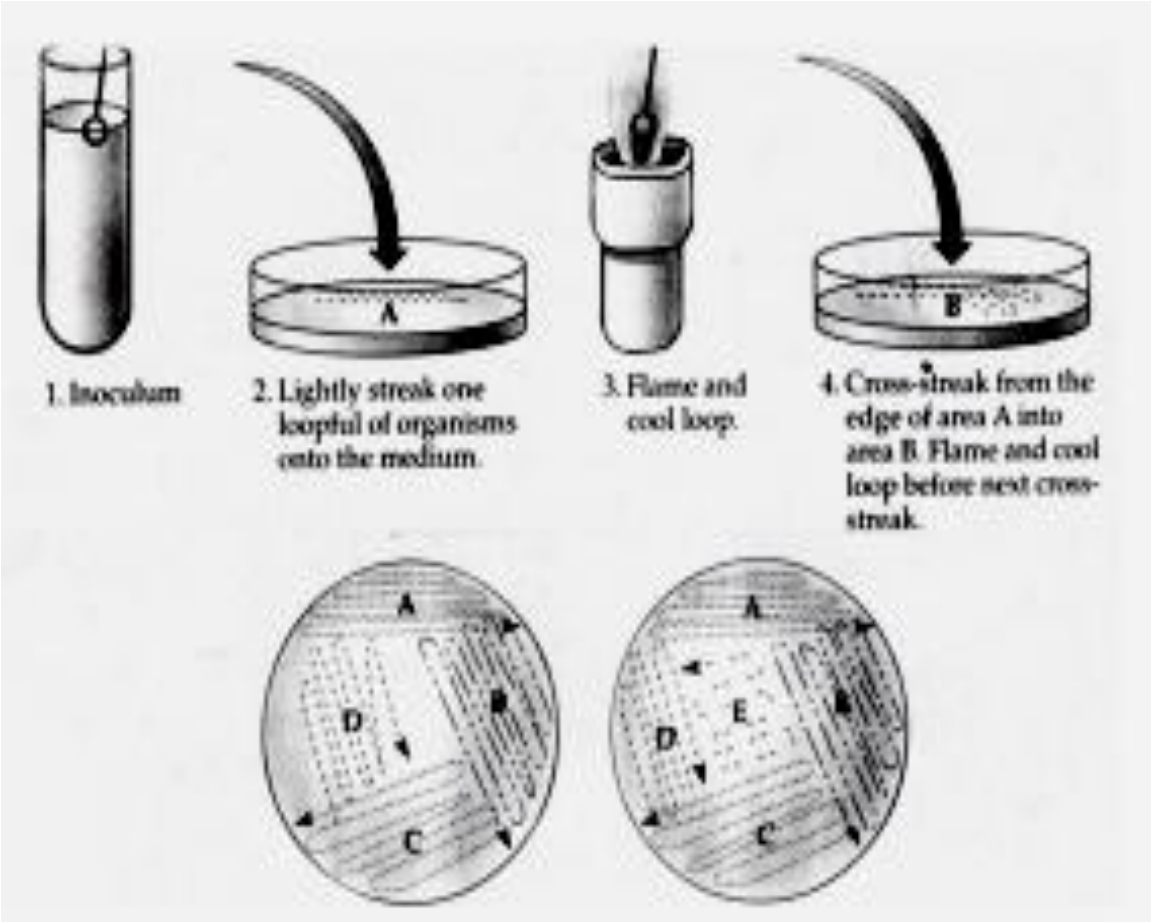


Figure 3: streaking method

1- Practical Microbiology for dental students by Bharti Arora . D.R.Arora .
2- Koneman, s Color Atlas and Text book of Diagnostic Microbiology.