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Collection of bacterial specimens

It's very important to collect bacterial specimens and carry them to the laboratories in a correct and proper way in order to get accurate results and to assure accurate diagnoses for the diseases . a wrong way in the collection of samples and improper processing before sending them to the lab will lead to a wrong diagnoses and then to a wrong treatments .

* Samples should be taken freshly and before giving any antibiotics.
* Very important and accurate conditions should be taken in.

Consideration during collection of samples.

- Time of taking the samples
- Fast carrying the samples
- Dealing with samples each sample in the container of samples should be labeled with:-

1-Patients name
2- Type of specimen
3- Age
4- Date
5- Diagnosis required

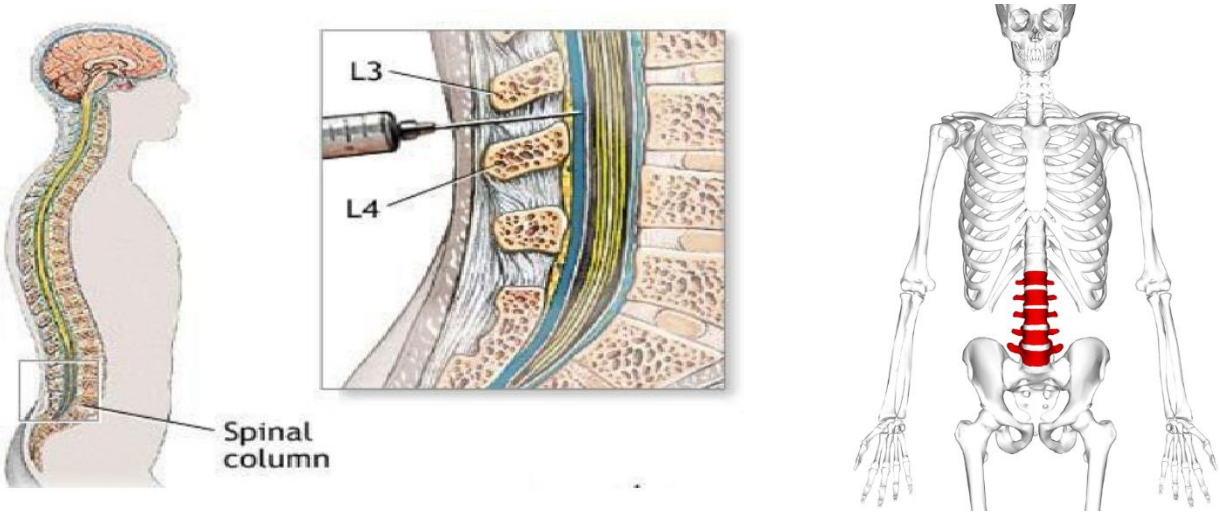
1- Blood

* Blood samples should be taken at the beginning of the infection and before giving any antibiotics and the most suitable time is when the patient has a fever.
* Send to the lab as soon as possible .
* Special tubes are used for blood culture.
* 7 to 10 ml of blood is usually collected for adults.
* 1 to 2 ml of blood is taken for newly born baby.
* 2 to 3 ml of blood is taken for children.
* *Salmonella typhi* is the common Bacteria found In blood.

2- Cerebrospinal fluid (CSF)

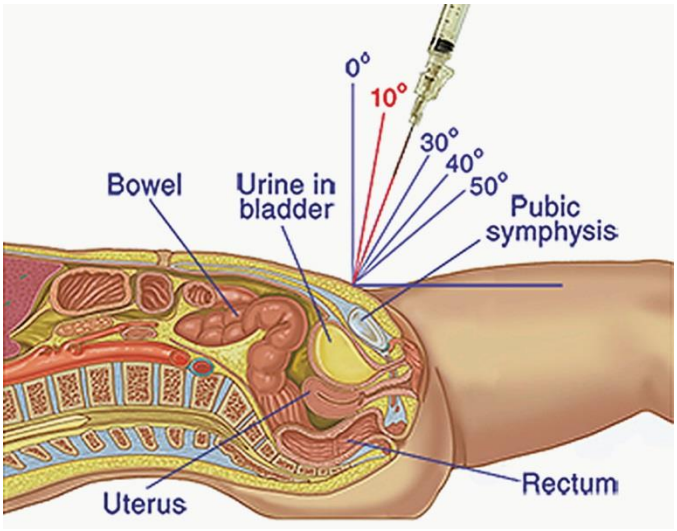
* It's used to diagnose meningitis .
* 5 to 10 ml of (CSF) of the lumber vertebrates is taken. Sterilized tubes is used for this purpose.

* (CSF) is collected by doing a lumber puncture by a very professional person .
**Neisseria meningitidis ,Hemophilus influenzae , Streptococcus pneumoniae* are the common bacteria found in (CSF).

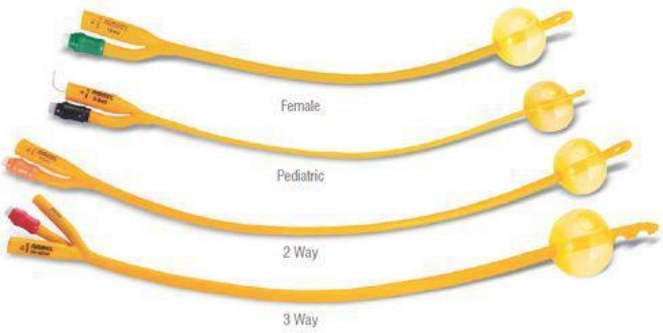


3- Urine

* It is preferable to collect 10ml of urine (midstream urine) and it is preferable to be in the morning
* A sterilized urine container with a wide opening and a cover is used to collect urine .
* Urine catheter is used for old people and for those who suffer certain problems of urination.
* Urine bag is used for children and infants.
* Suprapubic aspiration: urine is collected for small children and infants directly by aspiration from the bladder by a very thin needle.



* Urine samples should be carried to the lab as soon as possible (not more than 2 hours) otherwise samples should be kept in the refrigerator not more than 18 hours from the time of the collection.
* Streptococcus, Pseudomonas, Staphylococcus, *E. coli* are the most common bacteria found in urine.



4- Feces (stool examination)

* Feces is collected in a certain sterilized plastic container.
* Samples should be carried to the lab otherwise a swab of the sample should be taken and kept in a suitable media as (gram negative broth) for intestinal bacteria and (alkaline peptone water) for vibrio.
* Some bacteria like Shigella , Campylobacter , Salmonella , can't survive for long even if we put the sample in the refrigerator .
* Rectal swabs are sometimes used for children .

5- Sputum

* It is taken from the lower respiratory tract by strong deep coughing.
* Send to the lab as soon as possible or we can keep the sample for 2 to 3 hours without affecting the viability of the bacteria. But keeping the samples more than that could affect the viability of the bacteria.
* Haemophilus , *Mycobacterium tuberculosis* , *Streptococcus pneumoniae* are the common bacteria found in the sputum .

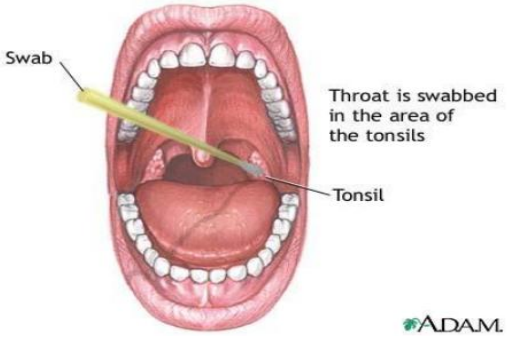
6- Swabs

1- Genital swabs

* Should be carried to the lab .
* *Neisseria gonorrhea* must be put in a media and incubated without any delay.
* There are transported media such as (Amie's , Stuarts , Tryptic soy broth) can be used for swabs without putting them in the refrigerator.

2- Throat swabs

* Swabs should be taken from the tonsils and surrounding area without touching the tongue, cheeks, and teeth to avoid contamination.
* *Streptococcus pyrogens* is the common bacteria found.



3- Wound swabs

* Swabs should be taken from the pus and lesions.

It is preferable to use transport media to reduce the dryness of the sample.

* The swabs should be soaked in the pus.
* Swabs from lesions, zig-zig movement is preferable to cover the whole area.
* Pseudomonas, *Staphylococcus aureus* are the common Bacteria found

Additive and recommended clinical use

Cap color	Sample type	Additive	Determination	Specimen Preparation Process
Blue	Whole blood/ Plasma	3.2% Sodium citrate, With blood ratio 1:9	Serum Solidification Test /PT/APTT/ Coagulation Factor Test	Immediately mix the sample 5-8 times after collection →Centrifugation
Yellow	Serum	Clot activator and gel for serum separation	Serum biochemistry/ Serum Immunology test	Immediately mix the sample 5-8 times after collection.keep it at room temperatue for 30mins →Centrifugation
Red	Serum	Clot activator	Serum biochemistry/ Serum Immunology test/Blood banking test	Immediately mix the sample 5-8 times after collection. waite it at room temperatue for 60mins →Centrifugation
Green	Ptasma	Lithium heparin	Emergency biochemistry,etc.	Immediately mix the sample 5 times after collection →Centrifugation
Purple	Whole blood	Spray-dried K2EDTA	Whole blood test, Blood banking test,etc.	Immediately mix the sample 5-8 times after collection.mix the sample before a hemotology test
Gray	Plasma	Sodium fluoride/ lithium heparin	Glucose Test	Immediately mix the sample 5 times after collection →Centrifugation
Black	Whole blood	3.8% Sodium citrate, With blood ratio 1:4	ESR test	Immediately mix the sample 5 times after collection.mix the sample before test