FINGER PUNCTURE -BLOOD SMEAR & STAINING OF BLOOD FILM:

BLOOD SAMPLE:

The term "blood sample" refers to the small amount of blood (a few drops or a few milliliters) obtained from a person for testing or investigations. A lab professional, known as a phlebotomist, will take a blood sample. Blood tests (blood work) are used to measure or examine cells, chemicals, proteins, or other substances in the blood.
These tests are carried out for aiding in the diagnosis and/ or prognosis of the disease or disorder.

ROMANOWSKY'S STAINS:

The four most commonly used are Stain:

- Giemsa Stain.
- Leishman Stain.
- Wright's Stain.
- Jenner's Stain.

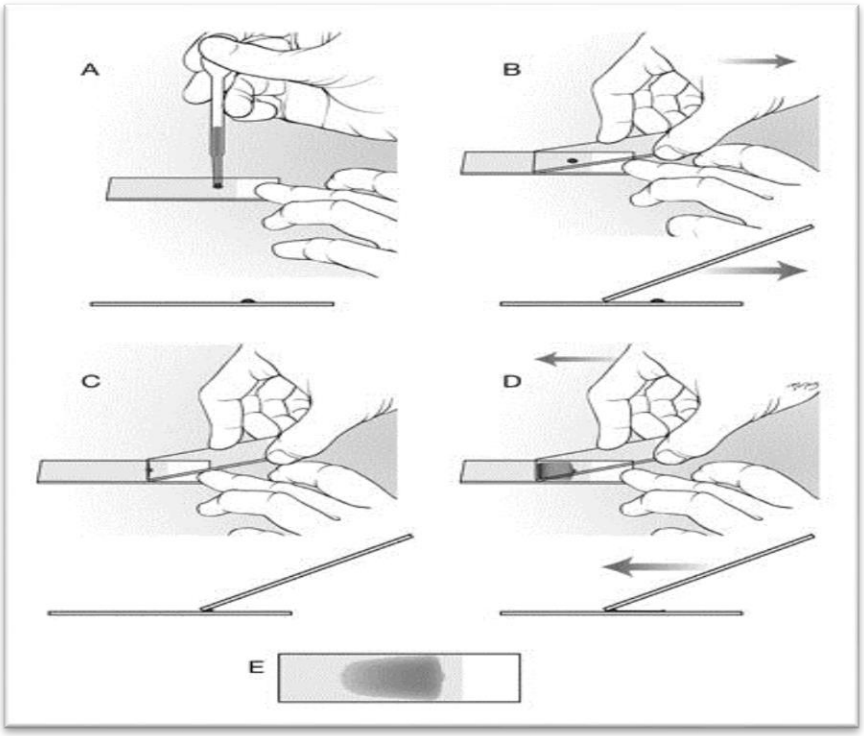
PREPARATION OF A BLOOD FILM (BLOOD SMEAR):

Blood films can be made from anticoagulated, or finger-prick blood.

PROCEDURES:

1. Keep the equipment for the test ready.
2. The selected site should be clean, and free from infection, edema, or skin disease.
3. Preparing the slides to start the experiment.
4. Using the lancet, form a drop of blood on the fingertip (The lancet/needle should be sterile, and if it is to be reused, it should be passed through a flame).
5. The puncture should be deep enough to give free-flowing blood (Do not press or squeeze the finger to increase the blood flow from the skin-prick, though the arm or the hand may be milked towards the fingers).
6. Allow the drop of blood to fall on the slide, without touching the surface of the slide with your fingers.
7. Using two slides, support the short end of the first slide with your thumb and fingers of your hand. And grasp the long edges of another slide "spreader", between the thumb and fingers of your second hand, so that its free end extends downwards and forms an angle of about 40° to the slide, just in front of the blood drop.
8. Pull the spreader back gently so that it touches the front of the blood drop. Hold it there, till the blood moves along the junction of the two slides by capillarity. The smear should be spread in about half a second. Any hesitation will result in striations in the film, firstly, examine the slide without staining (cross-exam via your eyes).
9. Dry the film by waving the slide in the air (Do not try to blot-dry). Then dropping the diluted stain to remain for 1–2 minutes.

10. Flush the slide in a gentle stream of distilled water for about 30 seconds (or for minutes) and leave the slides on the rack for about a minute. Drain the slides and put them in an inclined position, to dry them.
11. Lastly, examine the slide under the microscope.



OBSERVATIONS

The red cells appear as evenly numerous spread out, non-nucleated, flat biconcave disks of uniform size of 7.2–7.8 µm, round, oval, or pear-shaped, thinner in the center, and appear as paleness or pale pink structures. There may be overcrowding, overlapping, or rouleaux formation in the blood film.

I. Eosin. It is an acidic dye (negatively charged) and stains basic (positively charged) particles—granules of eosinophils.

II. Methylene blue. It is a basic dye (positively charged) and stains acidic (negatively charged) granules in the cytoplasm, nuclei of leukocytes, especially the granules of basophils.

III. Methyl alcohol (fixative). Alcohol must be free from acetone because acetone, a very strong lipid solvent, will, if present, cause crenation, shrinkage, or even destruction of cell membranes. Alcohol must be free from water since the latter may result in Rouleaux formation and even hemolysis.