**WHITE BLOOD CELLS**

**White blood cells (WBCs) are also called leukocytes. There are five**

**mature. The nucleus may be in one piece or appear as several lobes or segments. Special staining for microscopic examination gives each kind of WBC a distinctive appearance A normal WBC count (part of a CBC) is 5,000 to 10,000 per \_L. Notice that this number is quite small compared to a normal RBC count. Many of our WBCs are not circulating within blood vessels but are carrying out their functions in tissue fluid or in lymphatic tissue.**

**White blood cell count**

**Total Leucocytic Counting**

**The White blood cell count** denotes the number of WBC in 1 liter of whole blood .In a normal healthy individual WBC range

4.5-11 \*103 / mm3 this count varies with age. WBC count is useful to indicate infections or may be employed to follow the progress of certain diseases.

**METHODS**

**-Manual method.**

**-Electronic Cell Counting (coulter counter)**

**Material and Instruments**

**1-whole blood using EDTA as anticoagulant, capillary blood may be used.**

**2-Turk,s diluting fluid:**

**Lacial acetic acid 3 ml (to haemolyse RBC cell).**

**Aqueous gentian violet(1%w/v) 1ml ( to color the nuclei of WBC).**

**Distilled water 100 ml.**

**3-WBC pipette .**

**4-Haemocytometer(Neubauer,s counting chamber) with cover glass.**

**5- Microscope.**

**6-Lancet.**

**Procedure**

**1-Obtain a drop of blood draw blood up to the mark 0.5 using WBC pipette.**

**2- Aspirate diluting fluid up to mark 11 .the dilution is 1:20.**

**3-Remove blood from the outside of the pipette with a clean gauze.**

**4-Gently rotate the pipette horizontally with your hand to** ensure a proper amount of mixing for 3 minutes.

**5-After mixing ,discard the first four drops of the mixture.**

**6- Fill the counting chamber with diluted blood by holding the pipette at 45◦ with the slide and allow the mixture to seep under the coverslip .The filled chamber should be allowed to stand for about 1 minute prior to counting.**

**7-Count the WBC using low power 10 x objective .**

**8-Count all WBC in four large corner squares and add the results together to obtain the total number of cells counted .In counting the cells that touch the outside lines of the large square ,count only those that touch the left and upper outside lines ,discharging those that touch the right and lower outside margin .the WBC look like black dots.**

**CALCULATIONS**

**The volume of one corner square=1/10 mm3  
dilution=1/20**

**N=number of WBC in four corner squares.**

**Total number of WBC =N×200**