



University of Tikrit College of Pharmacy

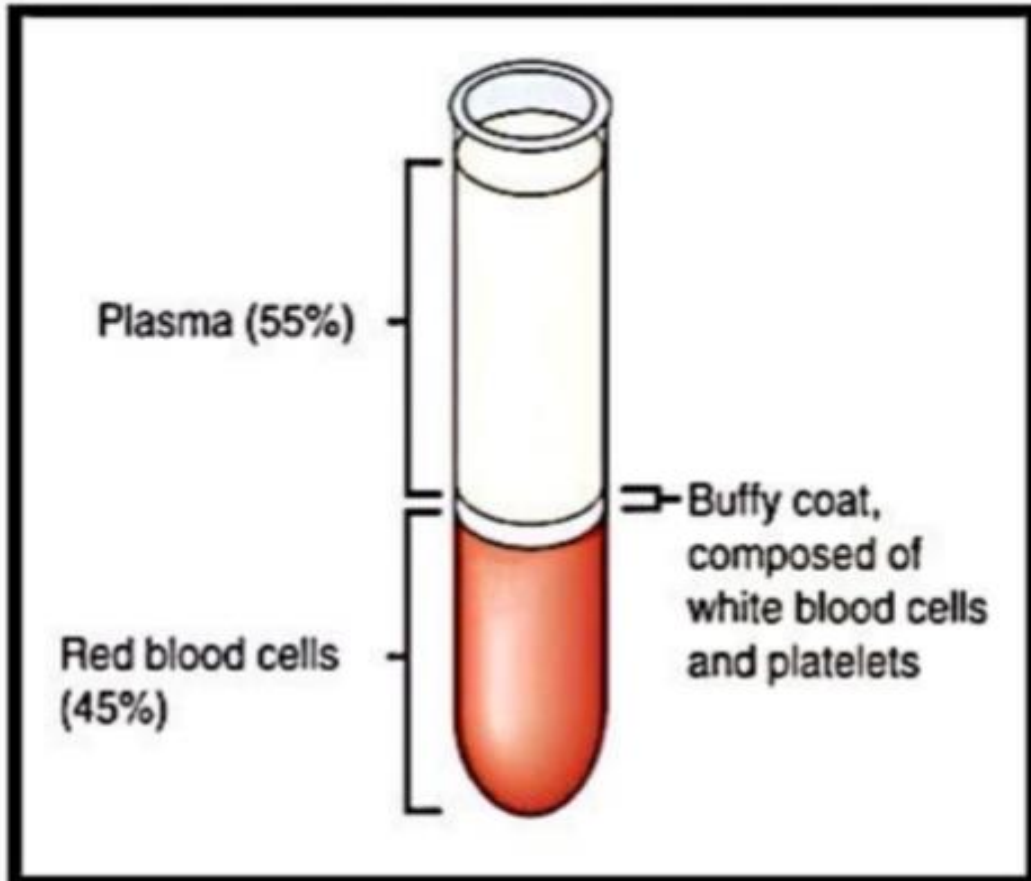
By: Asist Rabia Khalid Abdulsalam
Stage -2/Physiology lab-5 (Packed cell volume)

Packed Cell Volume (PCV)

Also known as. Hematocrit" (Hct)

Definition – the % of whole blood composed of RBC's .

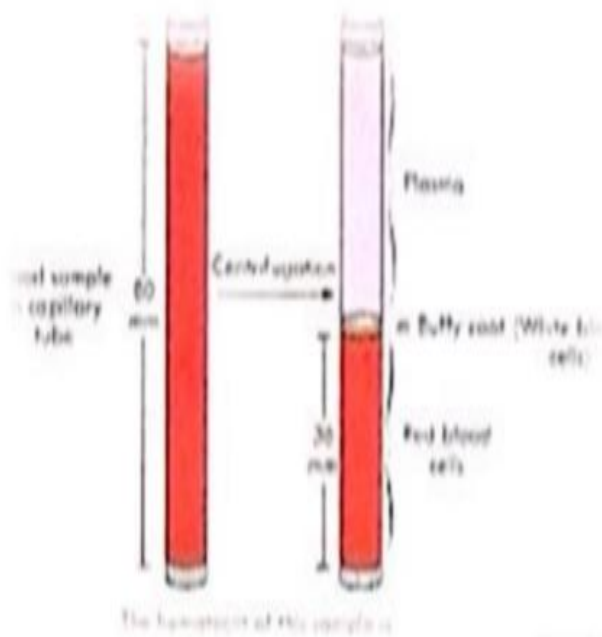
Most frequently used erythrocyte test



Haematocrit / Packed cell volume (PCV)

Macrohaematocrit method (Wintrobe Method)

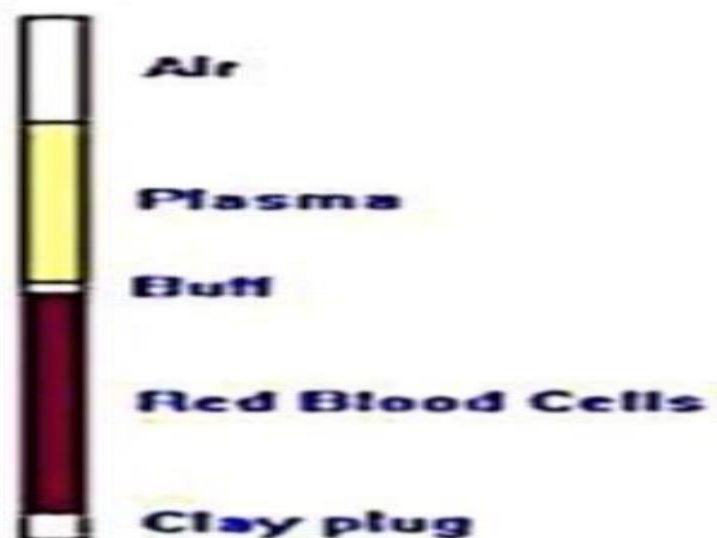
Microhaematocrit methods

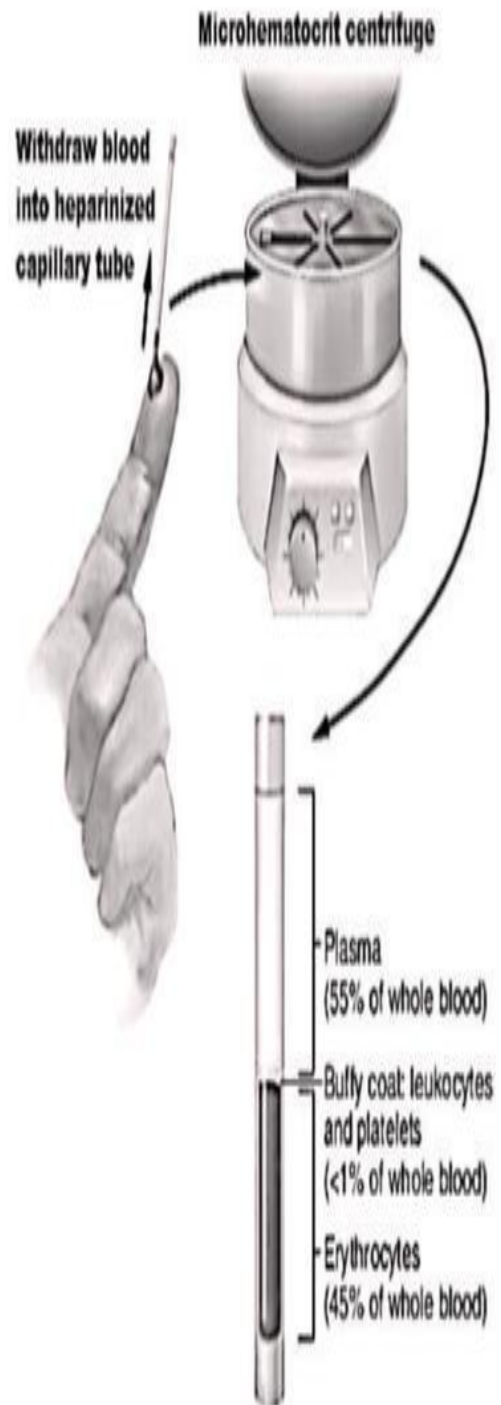


Microhaematocrit Method

Materials and instruments

1. Cotton and lancet
2. Heparinized capillary tubes (red label at the end of the tube)
3. Modeling clay sealant
4. Microhematocrit
5. Microhematocrit centrifuge
6. Reader





Hematocrit (Hct) or Packed Cell Volume (PCV):

Microhematocrit Procedure

To o perform the microhematocrit method, you should follow the steps listed below:

1. Fill tube two-thirds to three-quarters of the heparinized capillary tube with fingertip blood.
2. Non heparinized capillary tube is used when oxalated blood is obtained.
3. Seal one end of the tube with clay.
4. Place the filled tube in the microhematocrit. Centrifuge, with the plugged end away from the center of the centrifuge.
5. Centrifuge at a preset speed of 10,000 to 12,000 rpm for 5 minutes.
6. Place the tube in the microhematocrit reader. The hematocrit (PCV)%.

Normal values

The normal values of PCV vary according to the age and sex of the individuals. The normal ranges are

Males: 40%-54%

Females: 36%-47%

Newborns: 55-68%

Why is hematocrit important?

Hematocrit is a very useful laboratory finding as having too few or too many RBCs may be a clinical indication of various medical conditions, like anemia or polycythemia, respectively. It can also be used to monitor individuals post-operatively in order to prevent or screen for complications, like internal bleeding

Low Hematocrit Levels

Low hemoglobin levels due to:

Anemia

Hemolysis

Nutritional deficiencies

Bleeding

Pregnancy



High Hematocrit Level

Some factors may cause a rise in hematocrit value

Such as:

Polycythemia

Heart or kidney problems

Intake of anabolic steroids

Dehydration

Diarehea

Lung proplem

Burns

Smoking

High altitudes

