

Determination of packed cell volume (P.C.V.) Hematocrit

Is the percentage of the volume occupied by red blood cells in total blood

⌘ Purpose:

This is a benefit test for diagnosis of certain blood disorders for example. Increased P.C.V values indicate polycythemia, Diabetes mellitus, etc while Decreased P.C.V values indicate anemia, Leukemia and Hypothyroidism,etc

⌘ P.C.V. test:

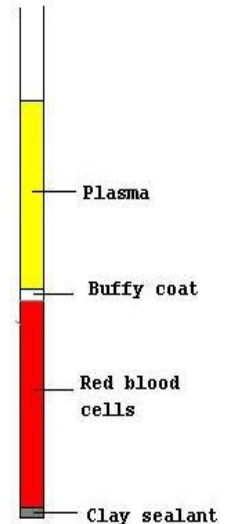
+ 1. Material required:

- 1-Blood sample.
- 2-Microhaematocrite centrifuge.
- 3-Microhaematocrite reader.
- 4- Wax or paste.
- 5-Cotton, alcohol.
- 6-Lancet.
- 7-Capillary tube.

+ 2. Procedure:

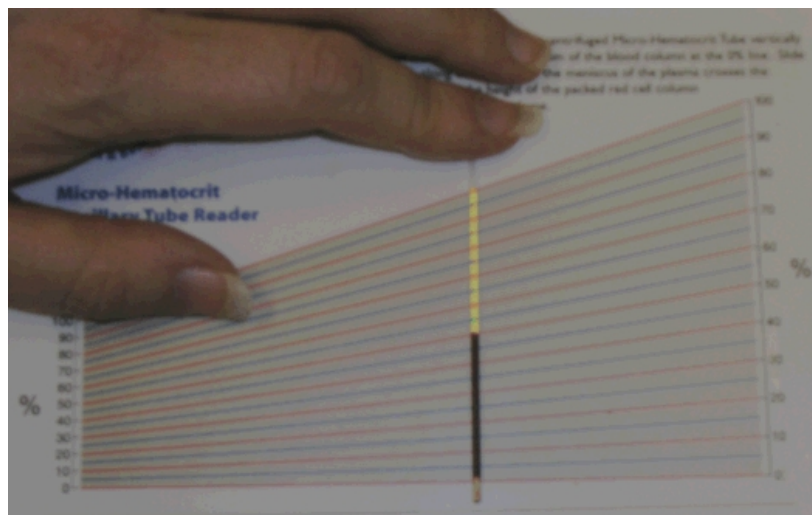
1. Fill a Hematocrit tube ($\frac{3}{4}$ full) with blood containing anticoagulant. If blood is obtained directly from the patient, you must sterilize the finger with cotton dipped in 70% alcohol puncture your finger with a disposable lancet to obtain a drop of blood .touch the red circle end of heparinized capillary tube to the drop,hold the tube in a horizontal position and allow the blood to enter the tube until it is $\frac{3}{4}$ full
2. Place finger over the “non-blood” end of the tube and push the opposite end into a clay sealant 3-4 times .
3. place the capillary tube in microcenterfuge,with plug end to the outside and centerfuge in 5min. at 10,000 R.P.M.

4. After centrifuge three layers will be produced:
 - Red Blood Cells are **packed** in the bottom .
 - The Buffy Coat (WBC + Platelets) in the middle .
 - The yellowish plasma on the top .
5. Using the haematocrite reader to read the value.



⌘ The method of calculating the value of the PCV own ruler:

The lower end of the capillary tube is placed at the zero line on the ruler from the left and then moves to the right until the top line of the plasma (the transparent part of the fluid in the tube) intersects with any line on the ruler. The value along the line between the red and transparent lines in the tube. This reading is the value of p.c.v.



The normal value is as follows:

Man	40 – 54 %
woman	37 – 47 %
Children	30 – 38 %
Infant	42 – 52 %

اعداد اساتذة مادة الفسلجة العملي/كلية المستقبل