**The hematocrit (Ht or Hct) or packed cell volume (PCV) is the percentage (%) of the concentration of Red Blood Cells (RBC) in blood. It is normally about (42–52% for men) and (36–48% for women).**

**Children:**

**Newborn : 51–61%**

**1 year : 32–38%**

**6 years : 34–42%**

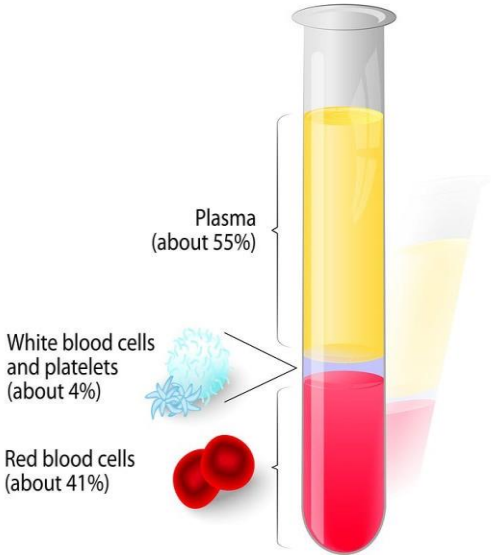
**In the laboratory this is most readily accomplished by centrifugation.**

**In a centrifuge blood separated into three distinct part including:**

**(1) the mass of the erythrocytes at the bottom which is referred to as packed cell volume (PCV).**

**(2) a white or gray layer of leukocytes and thrombocytes immediately above the red cell mass that is referred to as the buffy coat.**

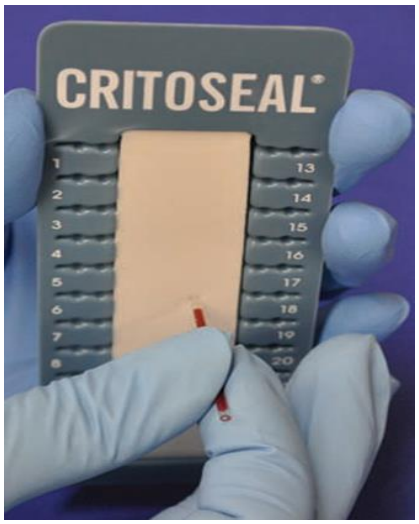
**(3) blood plasma in top.**

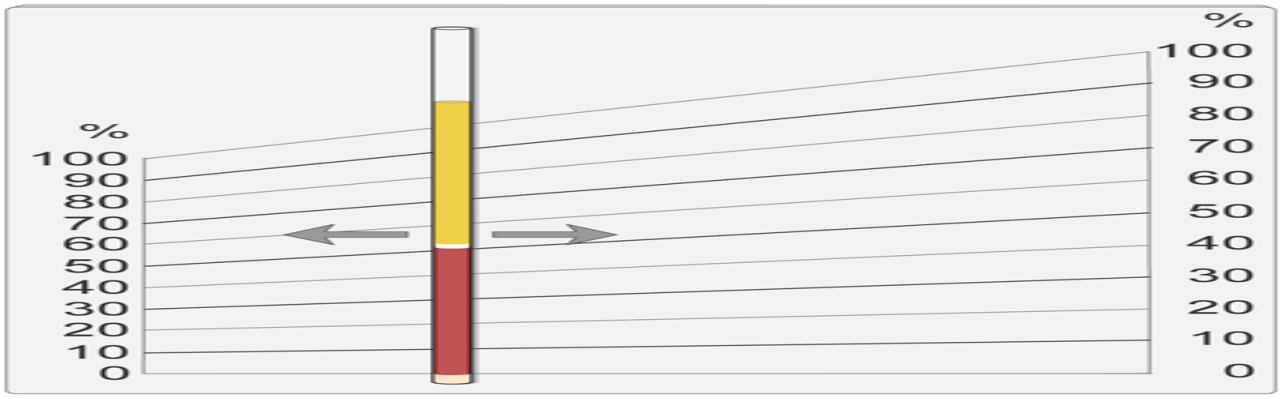



## Procedure

1- **In this method using capillary tubes coated with anticoagulant (heparinized capillary tube).**
2- **The marked end of a plain capillary tube is placed in the blood permitted to fill rapidly to approximately three-quarters of its length.**
3- **The marked end is then plugged with modeling clay or wax and placed in the centrifuge.**

4- **Centrifuge for 5 minutes at a set speed (force is approximately 3000 rpm). This separates red cells from plasma and leaves a band of buffy coat.**
5- **Allow the centrifuge to stop on its own, do not hand brake.**
6- **The hematocrit is read as the percent of whole venous blood occupied by red cells. This can be done by using microhematocrit reader.**






**microhematocrit reader**

**Elevated PCV :**

- **Fall in blood plasma levels**
- **Dehydration**
- **At higher altitudes, there is a lower oxygen supply in the air and thus hematocrit levels may increase over time.**

**Lowered PCV :**

- **A low hematocrit level is a sign of a low red blood cell count.**
- **Pregnancy may lead to women having additional fluid in blood. This could potentially lead to a small drop in hematocrit level.**