



Practical Physiology

Determination of Packed Cell Volume, PCV Hematocrit (Hct)

6th Practical



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Hematocrit is derived from Greek words 'Hemato' meaning "blood" , 'crit' meaning "to separate". Together "Hematocrit" means 'to separate blood' where blood cells and plasma are separated by centrifugation.

When a known volume of blood is centrifuged, the cells being heavier, settle down leaving a clear column of plasma above.

PCV or Hct is defined as the volume of RBCs per unit volume of the whole blood.

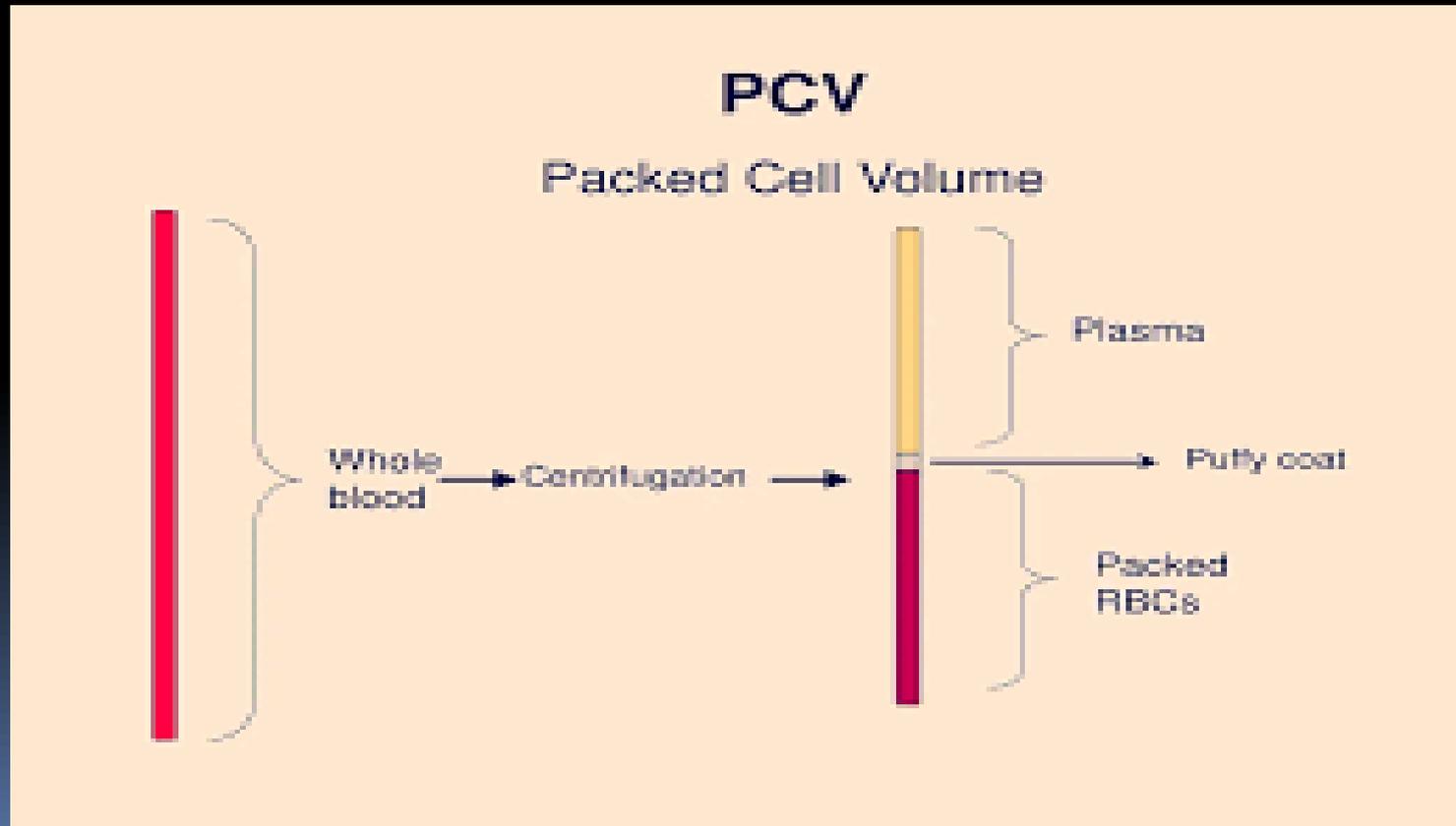
The PCV is the number of RBCs, or packed cell volume, expressed as a percentage of whole blood. For example, a packed cell volume of 36% means that a 100 mL sample of blood contains 36 mL of packed RBCs.

The packed cell volume (PCV) can be used as a simple screening test for anaemia.

Normal range for adults

Males (40–50%)

Females (36–44%)



The Materials and Equipments

- ✓ Sterile disposable lancet for finger puncture, Cotton and 70% alcohol.
- ✓ Capillary tube which is 75 mm in length and 1 mm in
- ✓ Diameter, containing Anticoagulant (Heparin).
- ✓ Plastic seal to seal one end of the capillary tube.
- ✓ Centrifuge device (Hematocrit centrifuge).
- ✓ Hematocrit Reader.



Procedure

- ✓ Clean the finger with 70% alcohol and let it to dry.
- ✓ With lancet do the finger puncture and remove the first drop of blood.
- ✓ Place the tip of capillary tube onto drop of blood and repeat until two third of tube is filled.
- ✓ Sealing the end of tube with plastic.
- ✓ Centrifuge the tube for 5 minutes and insure that centrifuge is balanced.
- ✓ Read the PCV with hematocrit reader.

Reading PCV Value

The capillary tube should be parallel to graduation and lower level of RBCs on zero line of the scale and the upper level of the scale and the upper level of the clear plasma on 100 % line). Do not include the buffy coat (WBCs and platelets when reading PCV value.

Clini
MPC
Multi Purpose C

Hematocrit Centrifuge READER CARD



CV