

## The Estimation of Hemoglobin (Hb)

Hemoglobin consist of the protein globin, united with pigment haem, haem is an iron containing, iron in haem is ferrus ( $\text{Fe}^{++}$ )

As the red blood cell pass through the lungs the hemoglobin combine with oxygen from the air forming oxyhemoglobin and become bright in colour, this make the oxygenated blood bright red

### Normal of Hb ▶

In male : 12–16 mg /dl ▶

In female : 11.5– 14 mg /dl ▶

In children : 14– 19 mg/dl ▶

### Function of Hb ▶


It is essential for oxygen carriage. ▶

Play an essential part in transport of Co<sub>2</sub> and regulation of blood reaction. ▶

## Why measured of hemoglobin ?▶

Hemoglobin is measured to ▶  
detect anemia and its severity  
and to monitor anemic patient  
under the treatment. •

It is also used to check the Hb ▶  
level of potential donor's blood,  
prior of donation.



## Sahli method

### Principle- ▶

- 1-Blood is mixed with an acid solution so that Hb is converted to brown colored acid hematin ▶
- 2-Diluted with water still brown colour matches that of brown glass standarder ▶
- 3-Hb value is read directly from scale ▶

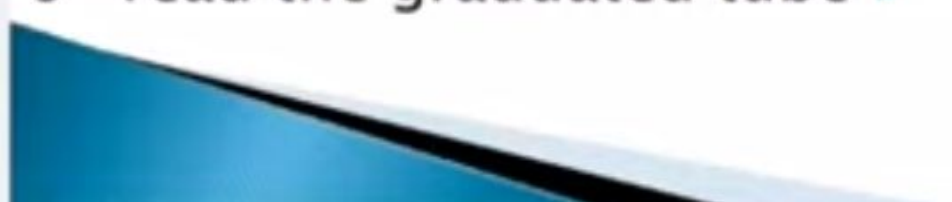
### Equipment

- 1-Sahli hemoglobinmeter ▶
- 2-Sahli pipette (20 microliter) ▶
- 3-Stirrer ▶
- 4-Dropping pipette ▶

### Reagent ▶

- 1-HCL ▶
- 2-Distilled water ▶

## Procedure

- 1 – all the apparatus must be clean and dry ▶
  - 2 – put in graduated tube(HCL) 0.1 N to mark 20 ▶
  - 3 – finger puncture ▶
  - With capillary pipette suck the blood to mark 20 ▶
  - 4 – mix with glassrod and leave for 10 min ▶
  - This time sufficient for haemolysing all the red ▶  
blood cells leaving hemoglobin to combine with  
HCL to forming haematin
  - 5 – then add distilled water drop by drop until ▶  
match the colour with standard glass tube
  - 6 – read the graduated tube ▶
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## Function of HCL

Hemolysis the RBCs and combin with Hb to form acid haematin ▶