

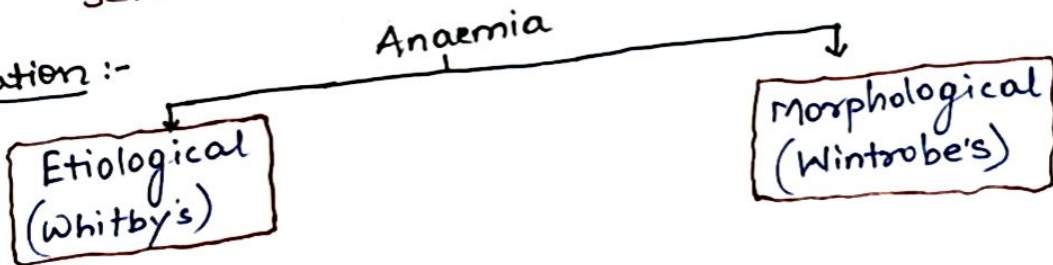
# ANAEMIA

- ☑ Defination
- ☑ Grading
- ☑ Classification
- ☑ RBC indices

# Defination :- It is a clinical condition characterised by reduction in number of **RBC's** and/or reduction in content of **Hb** below normal limits.

# Grading :- Mild Anaemia = Hb 8-12 gm/dl  
Moderate Anaemia = Hb 5-8 gm/dl  
Severe Anaemia = Hb <5 gm/dl

# Classification :-



**Etiological classification** :- OBO cause of anaemia  
(Whitby's)

① **Haemorrhagic** (Anaemia d/t blood loss)

→ Acute blood loss

- Trauma
- Surgery

→ Chronic blood loss

- Hemorrhoides
- Esophageal varices

- Ulcer
- Menstruation

② **Hemolytic** (Increased RBC destruction)

- Intra-corpuseular defects

- Hereditary spherocytosis
- SCA, thalassaemia
- G6PD deficiency
- Erythroblastosis foetalis

- Extra-corpuseular defects

- Malaria
- Drugs - Quinine
- Hypersplenism

③ **Decreased RBC production**

- Dietary deficiencies

- Iron def.
- Vit B<sub>12</sub> def.
- Folic acid def.

- Abnormal haemopoiesis  
(Aplastic anemia)

- X-rays
- $\gamma$ -rays
- cytotoxic drugs

Morphological classification (Wintrobe's) :- DBO size of RBC & Hb concentration

<div style="display: flex; justify-content: space-between;"> <span>RBC size</span> <span>Hb. conc.</span> </div>	Normochromic	Hypochromic
↓ Microcytic	<ul style="list-style-type: none"> <li>• Chronic infection</li> </ul>	<ul style="list-style-type: none"> <li>• IDA<sup>a</sup></li> <li>• Thalassaemia</li> <li>• Sideroblastic anaemia</li> </ul>
↓ Normocytic	<ul style="list-style-type: none"> <li>• Acute Hge</li> <li>• Hemolytic anaemia (except thalassaemia)</li> <li>• Aplastic anemia</li> </ul>	<ul style="list-style-type: none"> <li>• Chronic Hge</li> </ul>
↓ Macrocytic	<ul style="list-style-type: none"> <li>• Megaloblastic anaemia<sup>a</sup> (Vit B<sub>12</sub>, FA, IF)</li> </ul>	<ul style="list-style-type: none"> <li>• Liver disease</li> </ul>

## # RBC indices

Hemoglobin	→	<u>13.6 - 17.2 g/dl</u>	
Hematocrit	→	<u>39 - 49 %</u>	(% of vol. of RBC in blood)
MCV	→	<u>82 - 96 fL</u>	(avg. vol. of RBC) ← Microcytic Normocytic Macrocytic
MCH	→	<u>27 - 33 Pg</u>	(avg. Hb in RBC) ← Normochromic Hypochromic
MCHC	→	<u>33 - 37 g/dl</u>	(avg. conc. of Hb in given vol. of RBC)
Red cell distribution width	→	<u>11.5 - 14.5</u>	(measurement of variation of size in RBC (anisocytosis))

## # Signs & Symptoms of Anaemia

- Pallor
- Easy fatigue
- Weakness
- Dizziness