

ANAEMIA





Anaemia is a condition in which the number of red blood cells (and consequently their oxygen-carrying capacity) is insufficient to meet the body's physiologic needs.

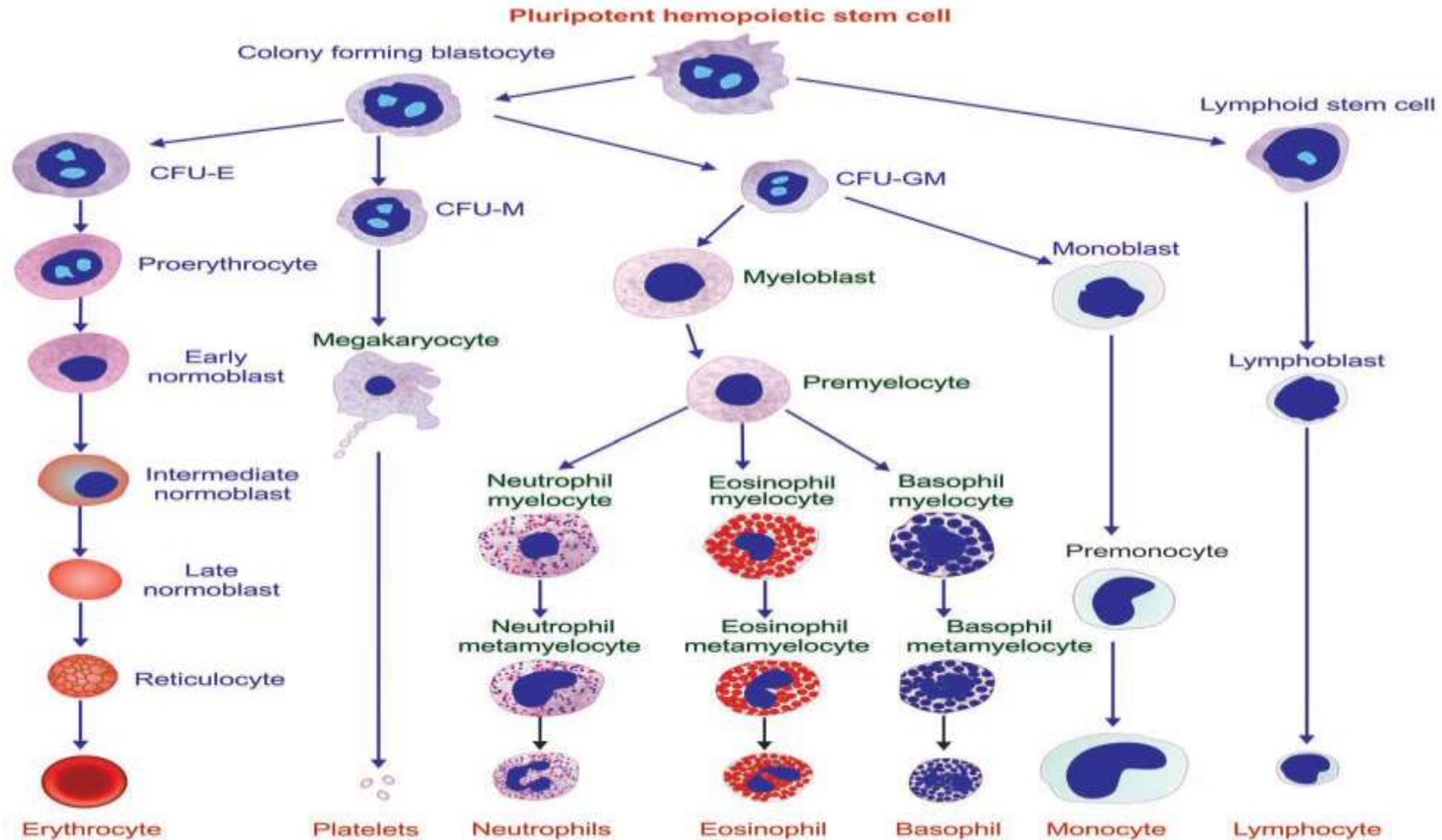
Anaemia is a sign of variety of diseases ranging from mild to severe.

Iron deficiency anaemia is the most common

HAEMOGLOBIN LEVELS TO DIAGNOSE ANAEMIA (g/L)

Population	Non - Anaemia	Anaemia		
		Mild	Moderate	Severe
Children 6 - 59 months of age	110 or higher	100-109	70-99	lower than 70
Children 5 - 11 years of age	115 or higher	110-114	80-109	lower than 80
Children 12 - 14 years of age	120 or higher	110-119	80-109	lower than 80
Non-pregnant women (15 years of age and above)	120 or higher	110-119	80-109	lower than 80
Pregnant women	110 or higher	100-109	70-99	lower than 70
Men (15 years of age and above)	130 or higher	110-129	80-109	lower than 80

ERYTHROPOIESIS



RBC INDICES

- Packed cell volume (PCV) is the proportion of blood occupied by RBCs, expressed in percentage. It is the volume of RBCs packed at the bottom of a hematocrit tube when the blood is centrifuged.

Normal PCV: In males = 40% to 45% In females = 38% to 42%

- MCV is the average volume of a single RBC and it is expressed in cubic microns ($\text{cu } \mu$).

Normal MCV is 90 $\text{cu } \mu$ (78 to 90 $\text{cu } \mu$)

- MCH is the quantity or amount of hemoglobin present in one RBC. It is expressed in micromicrogram or pictogram (pg).

Normal value of MCH is 30 pg (27 to 32 pg).

- MCHC is the concentration of hemoglobin in one RBC. It is the amount of hemoglobin expressed in relation to the volume of one RBC. So, the unit of expression is percentage.

Normal value of MCHC is 30% (30% to 38%)

PATHOPHYSIOLOGICAL CLASSIFICATION OF ANAEMIA

I. Anaemia due to increased blood loss

- a) Acute post-haemorrhagic anaemia
- b) Chronic blood loss

II. Anaemias due to impaired red cell production

a) Cytoplasmic maturation defects

I. Deficient haem synthesis:

Iron deficiency anaemia

2. Deficient globin synthesis:

Thalassaemic syndromes

b) Nuclear maturation defects

Vitamin B12 and/or folic acid deficiency:

Megaloblastic anaemia

c) Defect in stem cell proliferation and differentiation

I. Aplastic anaemia

2. Pure red cell aplasia

d) Anaemia of chronic disorders

e) Bone marrow infiltration

f) Congenital anaemia

III. Anaemias due to increased red cell destruction (Haemolytic anaemias)

A. Extrinsic (extracorporeal) red cell abnormalities

B. Intrinsic (intracorporeal) red cell abnormalities

MORPHOLOGICAL CLASSIFICATION OF ANAEMIA

I. Microcytic, hypochromic

II. Normocytic, normochromic

III. Macrocytic, normochromic