



**RAMA
UNIVERSITY**

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FACULTY OF NURSING



Anemia



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Definition

- Anemia is a common blood disorder that occurs when there are fewer red blood cells than normal, or there is a low concentration of hemoglobin in the blood.
- **Hemoglobin** - the part of blood that distributes oxygen from the lungs to tissues in the body.
- **Hematocrit** - the measurement of the percentage of red blood cells found in a specific volume of blood.

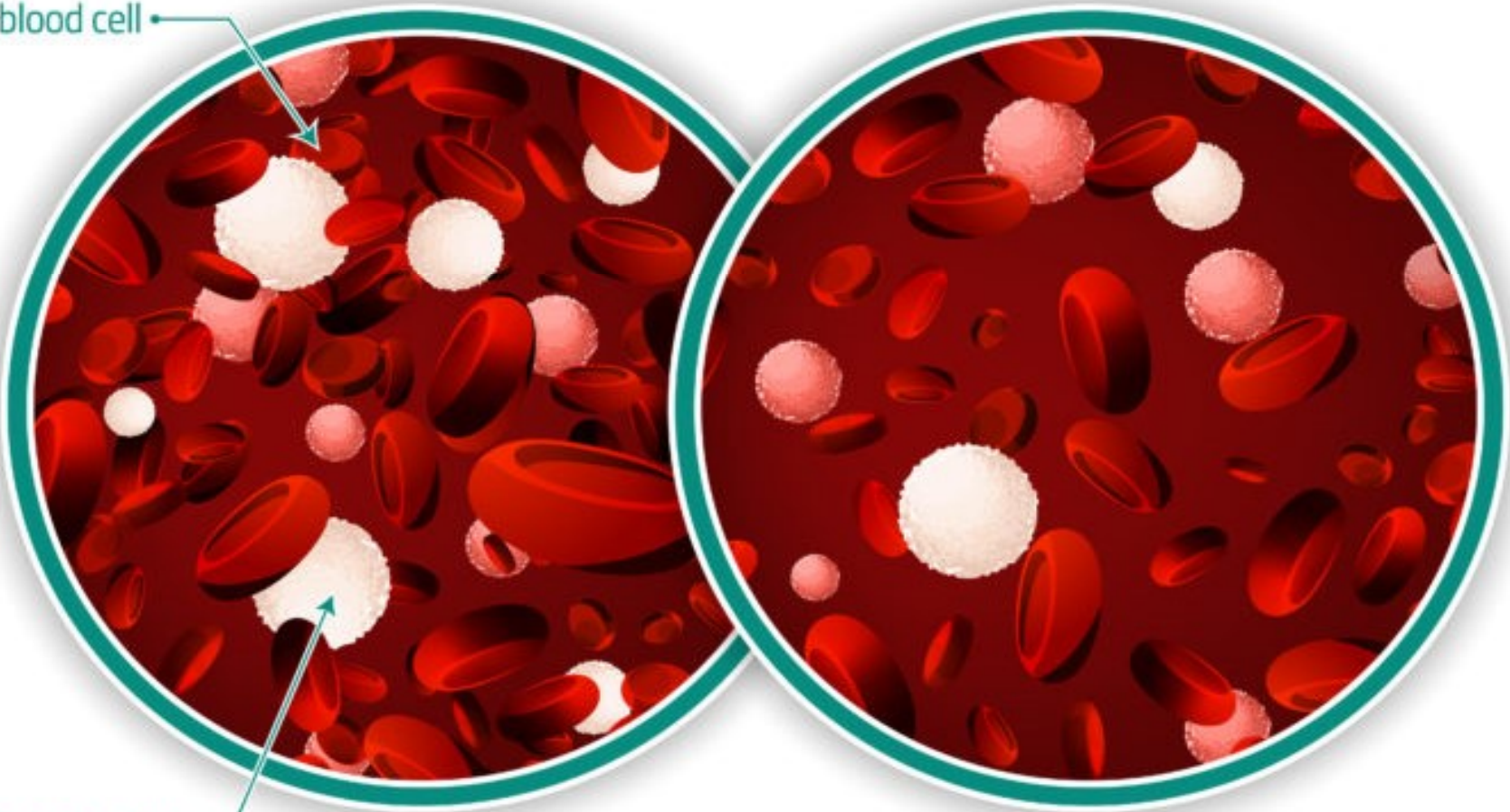
A N E M I A

**Normal level
of red blood cells**

**Anemia level
of red blood cells**

Red blood cell

White blood cell



WHO's Hb thresholds used to define anemia

Age or gender group	Hb threshold (g/dl)	Hb threshold (mmol/l)
Children (0.5–5.0 yrs)	11.0	6.8
Children (5–12 yrs)	11.5	7.1
Teens (12–15 yrs)	12.0	7.4
Women, non-pregnant (>15yrs)	12.0	7.4
Women, pregnant	11.0	6.8
Men (>15yrs)	13.0	8.1

Types of Anemia

- Iron deficiency anemia
- Megaloblastic (pernicious) anemia
- Hemolytic anemia
- Sickle cell anemia
- Cooley's anemia (thalassemia)
- Aplastic anemia
- Chronic anemia

Severity
WHO



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graph TD; A[Severity WHO] --- B[Moderate 7-10.9 g/dl]; A --- C[Severe 4-6.9 g/dl]; A --- D[Very severe <4 g/dl];
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Moderate
7-10.9 g/dl

Severe
4-6.9 g/dl

Very severe
<4 g/dl

Causes

- Generally, anemia may be caused by several problems, including the following:
 - Infection.
 - Certain diseases.
 - Certain medications.
 - Poor nutrition.

Symptoms of Anemia

- Hypoxia
- Abnormal paleness or lack of color of the skin.
- Increased heart rate (tachycardia).
- Breathlessness, or difficulty catching a breath (dyspnea).
- Lack of energy, or tiring easily (fatigue).
- Dizziness, or vertigo especially when standing.
- Headache.

- Irritability.
- Irregular menstruation cycles.
- Absent or delayed menstruation (amenorrhea).
- Sore or swollen tongue (glossitis).
- Jaundice, or yellowing of skin, eyes, and mouth.
- Enlarged spleen or liver (splenomegaly, hepatomegaly).
- Slow or delayed growth and development.

Treatment

Treatment for anemia depends on the cause. Generally speaking, children with anemia

Might require:

- Medicines
- Changes in Their Diet
- Blood Transfusions
- Treatment of Another Underlying Disease

Anemia can be difficult to treat and may include:

- Vitamin and mineral supplements.
- Change in your child's diet.
- Medication and/or discontinuing causative medications.
- Treatment of the causative disorder.
- Surgery to remove spleen (if related to hemolytic anemia).
- Blood transfusions, if necessary (to replace significant loss).
- Antibiotics (if infection is causative agent).
- Bone marrow transplant (for Aplastic anemia).

COMPLICATIONS OF ANEMIA

- Long term problems lead to complications:
- every organ is involved.
- **growth and development**: children below normal weight > delayed sexual maturation > hormone therapy.
- **Bones**: hip joint replacement may be required due to vaso-occlusion episodes leading to chronic infarcts.
- **Infection**: more common in the tissues which vaso-occlusion occur ex: bones, lungs and kidney.
- **Respiratory**: shortness of breath, chest pain and hypoxia > death



Thank you