Anemia

Is common nutritional deficiency disorder and global public health problem, is defined as a low number of red blood cells in **CBC**, it is reported as a low hemoglobin or hematocrit (**PCV**), if any person have anemia, hemoglobin level will be low too, that cause tissues and organs may not get enough oxygen (tissue hypoxia).

Symptoms:

Depending on the causes and types of the anemia, general symptoms include:

1-Dizziness 2-Fast or unusual heartbeat 3-Headache 4-Pain, including in your bones, chest, belly, and joints 5-Problems with growth, for children and teens 6-Shortness of breath 7-Skin that's pale or yellow 8-Cold hands and feet 9-Tiredness or weakness.

All these symptoms, because low equipment of oxygen in all organs of body which lead to **decrease energy production**, due to **depression metabolic process**.

Classification of Anemia:

There are more than 400 types of anemia, we will explain the important types around world and causes of it, they're divided into three main groups:

A-anemia caused by blood loss, include:

1-Gastrointestinal conditions such as ulcers, hemorrhoids, gastritis (inflammation of your stomach), and cancer

2-Non-steroidal anti-inflammatory drugs (NSAIDs) such as aspirin or ibuprofen, which can cause ulcers and gastritis

3-Woman have a heavy menstruation

4-Post-trauma or post-surgery as well.

B- Anemia caused by decreased red blood cell production

When body don't create enough blood cells, or don't have enough minerals and vitamins for your red blood cells to form normally, include:

1-Bone marrow and stem cell problems, that include (**Aplastic anemia, Thalassemia** and lead poisoning)

2-Iron-deficiency anemia

3-Sickle cell anemia

4-Vitamin-deficiency anemia, specifically b12 or folate

C-Anemia caused by destruction of red blood cells:

When red blood cells are **fragile** and can't resistant the stress of traveling through your body, they may burst, causing what's called **Hemolytic anemia.**

Other types of anemia associated with chronic conditions usually occurs in long-standing **inflammation.** Inflammatory proteins slow the bone marrow's production of young red blood cells in a variety of ways

Conditions caused these types of anemia include:

1- kidney disease 2-Hypothyroidism 3-Old age 4-Long-term diseases, such as cancer, infection, lupus, diabetes, rheumatoid arthritis, pregnancy and 5- parasite infection such as: Schistosomiasis, malaria, Hook worms and other (which causes blood loos and malnutrition).

Anemia Diagnosis:

It Characterized by a decrease in the concentration of hemoglobin in the blood. A complete blood count (**CBC**) test will measure revealed: **low PCV and low RBCc, low Hb and low Hct** that main features of anemia.

Classification of anemia depend on RBC size:

After CBC and depend on mean corpuscular volume (MCV) and mean corpuscular of hemoglobin (MCH).

Type of anemia	MCV (fl)	MCH (µg)
Normocytic anemia	82 - 92	25 - 30
Microcytic anemia	50 - 80	12 - 25
Macrocytic anemia	95 - 150	30 - 50
Normal value	82 - 92	27 - 31

Normocytic = normal size of RBC and normal MCV.

Macrocytic = larger RBC size than normal and increase MCV compare normal.

Microcytic = smaller RBC size and decrease MCV.

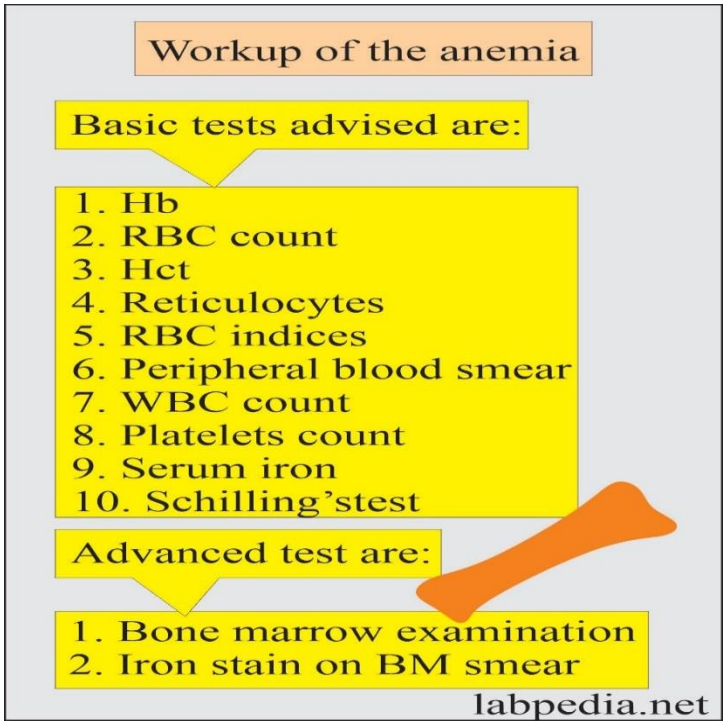
Anemia classified depend on Hemoglobin concentration:

Types / Gender	Mild Anemia	Moderate Anemia	Severe Anemia
Male	10 – 12 g/dl	8 – 10 g/dl	< 8 g/dl
Female	9 – 11 g/dl	7 – 9 g/dl	< 7 g/dl

Normal values of Hb concentration

Male: 13.5 g/dl

Female: 11.5 g/dl



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