



- **Define anemia in pregnancy.**

- A hemoglobin concentration of < 10 g/dL during pregnancy (notice that this is less than the 12 g/dL which is the lower limits of normal in the nonpregnant woman due to physiologic dilution of blood in pregnancy).

- **What are the degrees of anemia?**

Mild	8-10 g/dL
Moderate	7-8 g/dL
Severe	< 7 g/dL

- **What are the normal physiologic changes of hematologic system which occur during pregnancy?**

- Increase in plasma volume by 50% (from 5 L to 7.5 L). Although red cell mass will increase by 25% but there will be physiologic dilution of blood.
- There is 2-3 fold increase in iron requirement in pregnancy.
- Pregnancy is considered to be a hypercoagulable state.

- **Iron deficiency anemia (microcytic, hypochromic):**

- **Iron requirement for normal pregnancy is 1 gram.**
- **What are the risk factors?**
 - ✓ Poor nutritional intake of iron.
 - ✓ Increased demand in (e.g. pregnancy and menorrhagia).
 - ✓ Chronic bleeding.
- **Pathophysiology:**
 - ✓ Falling hemoglobin values do not occur until complete depletion of iron stores in the liver, spleen and bone marrow.
 - ✓ This is followed by a decrease in serum iron and increase in Total Iron Binding Capacity (TIBC).
- **Clinical features: patients are usually asymptomatic, but you might find the following:**
 - ✓ General anemia symptoms:
 - ❖ Fatigue and dizziness.
 - ❖ Headache.
 - ❖ Palpitation.
 - ❖ Irritability.
 - ✓ Characteristic symptoms of iron deficiency anemia:
 - ❖ Glossitis/ stomatitis.
 - ❖ Dry pale skin.
 - ❖ Spoon-shaped nails (koilonychias).
 - ❖ Hair loss.
 - ❖ Pica (appetite for non-food substances such as ice or clay).
- **Fetal effects:** IUGR and pre-term birth.
- **Treatment:**
 - ✓ Mild-moderate anemia: ferrous sulfate 325 mg tablet continued for 3-6 months.
 - ✓ Severe anemia: parenteral iron. Notice that severe iron deficiency anemia diagnosed in later stages of pregnancy may require blood transfusion.



- **Folate deficiency anemia (megaloblastic anemia):**
 - It may be due to deficiency of folate or vitamin B12 or both but in pregnancy it is almost always due to folic acid deficiency. This will cause impaired DNA synthesis and derangement in red cell maturation.
 - **How is it diagnosed?**
 - ✓ RBCs are macrocytic.
 - ✓ $Hb \leq 10$ g/dL
 - ✓ $MCV > 100$
 - ✓ Peripheral blood smear may show hypersegmented neutrophils.
 - **Pathophysiology:** folate stores in the body are usually enough for 90 days (3 months). Falling hemoglobin values do not occur until complete depletion of folate stores.
 - **Fetal effects:** IUGR, pre-term birth and NTD.
 - **Treatment:** folate 1 mg orally daily.
 - **Prevention:**
 - ✓ Folate 0.4 mg orally daily for all women.
 - ✓ Folate 4 mg orally daily for those at high risk for NTD.