* extramedullary hematopoiesis : spleen & liver
Bone marrow بتصير لما يقل التصنيع من

(* anemia): reduce oxygen transport capacity (not diagnosis)

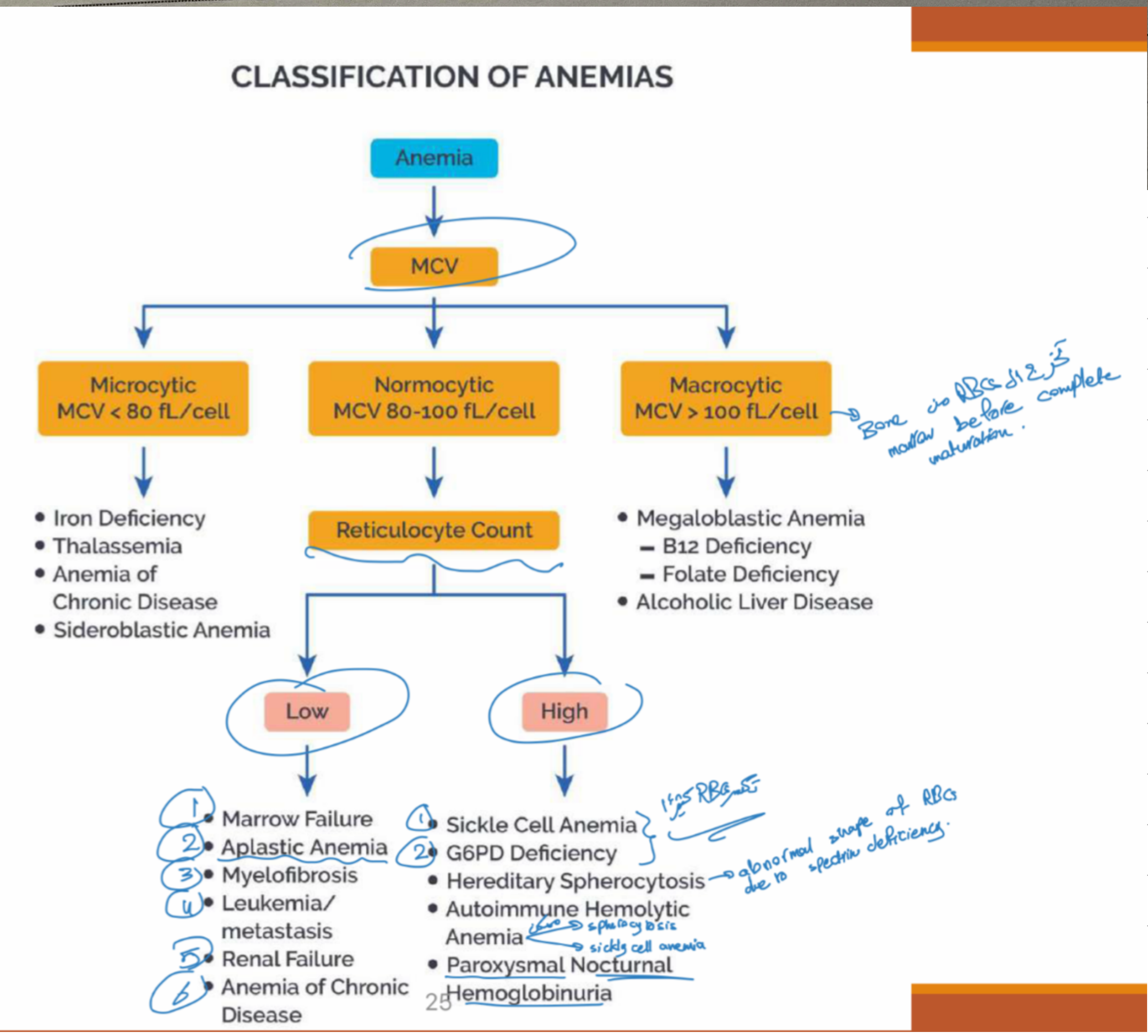
↑ bleeding — ↑ RBCs destruction — ↓ RBCs production

- Clinical cues :
  1) fainting 2) pallor 3) techycardia 4) jaundice 5) gall bladder / ston
  6) red urine

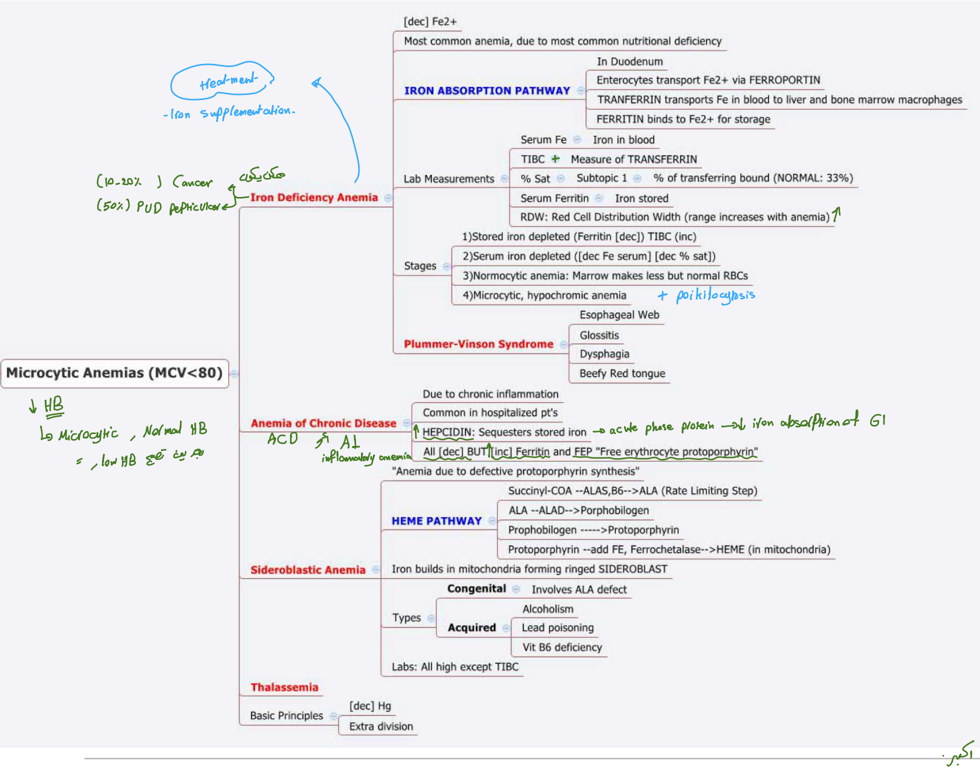
- work up : 1) CBC 2) blood smear

- reticulocytes
  - ↑ >3% → bone marrow good → المشكلة → hemolysis / chronic blood loss
  - ↓ <2% → defected bone marrow

corrected = count
= reticulocyte % × $\frac{\text{Acute HCT}}{\text{Normal HCT}}$



Iron dificiency anemia



* every 3 transferrin bound to one molecule of Fe

* hepsidine { inhibit the absorption of GI / liver ... }

* Causes of Iron deficiency anemia :

1- malnutrition   2- malabsorption (celiac disease), gastrictomy

3- ↑ demand pregnancy, labor   4- chronic blood loss → inflamation, GI bleeding, peptic ulcer, Cancer

* Clinical presentation of Iron deficiency anemia:

1) Usually is Asymptomatic

2) weakness ⟶ Sever Cases.

3) spooning of finger nails (koilonychia)

4) pica (اكل التراب ...)

5) glossitis & cheilitis

anemia of chronic disease

يمنع البكتيريا من التغذي على ال (Iron) لكي لا تتكاثر بشكل اكبر.

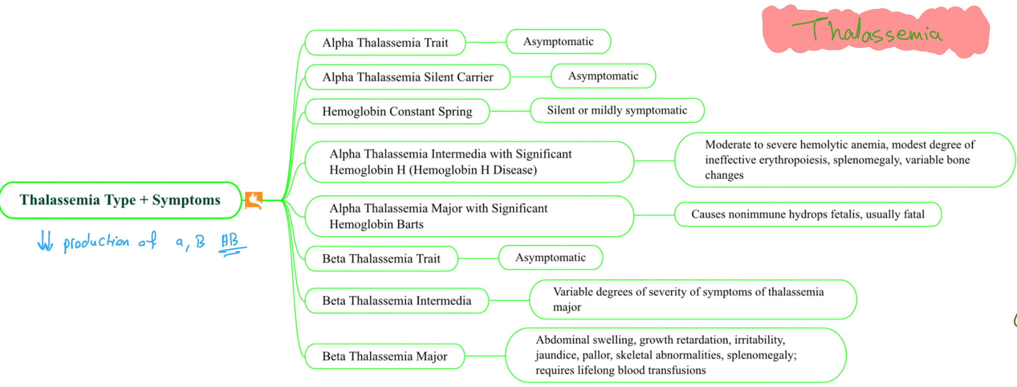
↑↑ hepcidine ⟵ machrophages من { IL-1b / IL-6 }

↓ erthropoietin production ⟵ { IL-1b / TNF }

① ↓↓ hepcidine   2) exogenous erthropoietin : Treatment ACD *

in Cancer patients

Thalassemia



* نفحص اول شي : ① CBC ⟵ لازم يكون ↓ MCV & ↓ MCH

بعدها نتأكد انه Iron deficiency او لا .

* ↑↑ the production of unaffected globin chain

* α thalassemia : ↓ HB   ↓ MCV   ↓ MCH

* diagnosis of thalassemia ① CBC ② blood Smear

③ electrophoresis ④ family hx.